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IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS OFFICIAL PUBLICATION

THE LIBRARY OF THE
JAN 8 1931

ANNOUNCEMENT

DIVISION OF VETERINARY MEDICINE
1920-1921

VOL. XIX NO. 11 AUGUST 11, 1920 AMES, IOWA

The College

The Iowa State College of Agriculture and Mechanic Arts conducts work in five major lines:

AGRICULTURE
ENGINEERING
HOME ECONOMICS
INDUSTRIAL SCIENCE
VETERINARY MEDICINE

The Graduate College conducts advanced research and gives instruction in all these five lines.

Four-year, five-year, and six-year collegiate courses are offered in different divisions of the College. Non-collegiate courses are offered in agriculture, engineering, and home economics. Summer Sessions include graduate, collegiate, and non-collegiate work. Short courses are offered in the winter.

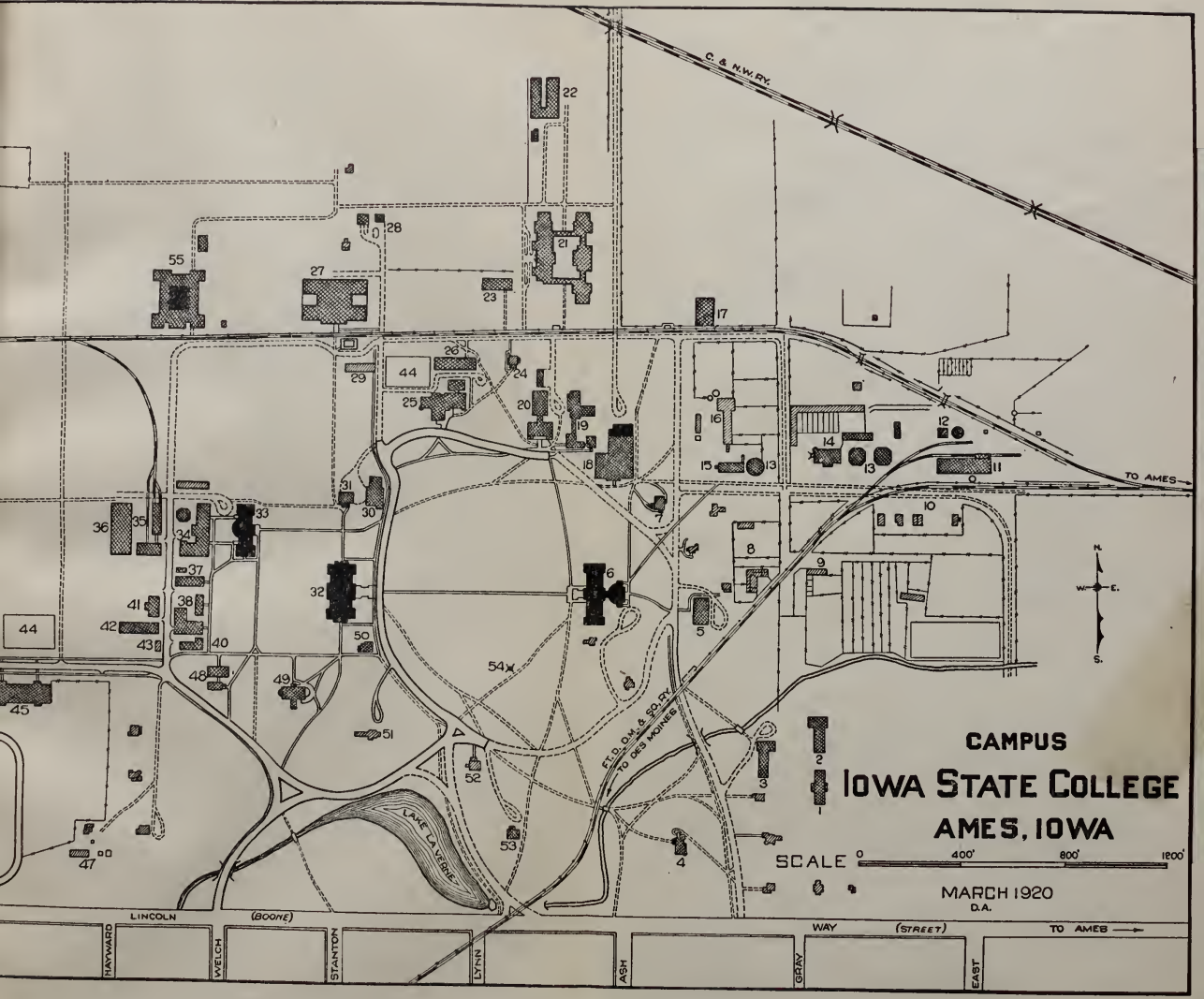
Extension courses are conducted at various points throughout the state.

Research work is conducted in the Agricultural and Engineering Experiment Stations and in the Veterinary Research Laboratory.

Special announcements of the different branches of the work are supplied, free of charge, on application.

Address THE REGISTRAR,
Ames, Iowa.

UNIVERSITY OF ILLINOIS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AMES, IOWA
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MARCH 1920
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IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS OFFICIAL PUBLICATION

DIVISION OF VETERINARY MEDICINE

1920-1921

THE LIBRARY OF THE
JAN 8 1921
UNIVERSITY OF ILLINOIS

VOL. XIX, NO. 11, AUGUST 11, 1920

AMES, IOWA

Published weekly by the Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa. Entered as second-class matter and accepted for mailing at special rate of postage provided for in Section 429, P. L. & R. Act, August, 24, 1912, authorized April 12, 1920

CALENDAR

1920

JANUARY

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1921

JANUARY

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College Calendar

1920-1921

The General College Faculty meets on the third Monday of each month at 4 P. M. in Central Building. The faculties of the different divisions meet each month as follows:

First Monday, 4 P. M.....Home Economics
Tuesday, following first Monday, 4 P. M.....Veterinary Medicine
Wednesday, following first Monday, 4 P. M.....Engineering
Thursday, following first Monday, 4 P. M.....Agriculture
Second Monday, 4 P. M.....Industrial Science

This calendar is subject to change at any time.

1920

FALL QUARTER

September 23-24, Thursday and Friday, 8:00 A. M.	Entrance Examinations.
September 27-28, Monday, 8:00 A.M. to Tuesday, 5:00 P. M.	Registration-Classification.
September 29, Wednesday, 8:00 A.M.	College Work Begins.
October 2, Saturday, 8:00 P. M.	Y. W. C. A. and Y. M. C. A. Reception.
October 9, Saturday, 8:00 P. M.	Agricultural Reception.
October 16, Saturday, 8:00 P. M.	Sophomore-Freshman Annual.
November 25, Thursday	Thanksgiving. Holiday.
December 22, Wednesday, 11:00 A. M.	Fall Quarter Closes.

1921

FARM AND HOME WEEK

January 3, Monday, to January 8, Saturday	Special Short Courses and Convention Week.

WINTER QUARTER

January 10, Monday, 8.00 A. M., to 5:00 P. M.	Registration-Classification.
January 11, Tuesday, 8:00 A. M.	College Work Begins.
March 11-12, Friday, 1:00 P. M., to Saturday, 12:00 M.	Engineers' Open House.
March 23, Wednesday, 11:00 A. M.	Winter Quarter Closes.

SPRING QUARTER

March 28, Monday, 8:00 A. M., to 5:00 P. M.	Registration-Classification.
March 29, Tueday, 8:00 A. M.	College Work Begins.
May 7, Saturday, 8:00 P. M.	Military Ball.
May 13, Friday, 4:00 P. M.	May Day Fete.
June 11, Saturday, 8:00 A. M.	Senior Promenade.
June 12, Sunday, 10:30 A. M.	Baccalaureate Sermon.
June 13, Monday	Seniors' Day.
June 14, Tuesday	Alumni Day.
June 15, Wednesday, 10:30 A. M.	Commencement.
June 15, Wednesday, 2:30 P. M.	President's Reception.

SUMMER SESSION

First Term

June 13, Monday.	Registration-Classification.
July 20, Wednesday, 4:00 P. M.	First Term Closes.

Second Term

July 20, Wednesday	Registration-Classification.
August 26, Friday, 4:00 P. M.	Second Term Closes.

FALL QUARTER

September 22-23, Thursday and Friday, 8:00 A. M.	Entrance Examinations.
September 26-27, Monday, 8:00 A. M., to Tuesday, 5:00 P. M.	Registration-Classification.

Iowa State Board of Education

D. D. Murphey, President.....Elkader
W. H. Gemmill, Secretary.....Des Moines

MEMBERS OF BOARD

TERMS EXPIRE JULY 1, 1921

Paul Stillman.....Jefferson
Edw. P. Schoentgen.....Council Bluffs
Frank F. Jones.....Villisca

TERMS EXPIRE JULY 1, 1923

Geo. T. Baker.....Davenport
B. F. Ketcham.....Farmington
Willard C. Stuckslager.....Lisbon

TERMS EXPIRE JULY 1, 1925

P. K. Holbrook.....Onawa
Chas. R. Brenton.....Dallas Center
D. D. Murphy.....Elkader

STANDING COMMITTEES

Faculty Committee—D. D. Murphy, P. K. Holbrook, B. F. Ketcham, Paul E. Stillman, W. C. Stuckslager.
Building and Business Committee—Chas. R. Brenton, D. D. Murphy, Edw. P. Schoentgen, Geo. T. Baker, F. F. Jones.

FINANCE COMMITTEE

W. R. Boyd, Chairman.....Cedar Rapids
Thos. Lambert.....Sabula
W. H. Gemmill, Secretary.....Des Moines

BOARD ON SECONDARY SCHOOL RELATIONS

John E. Foster, Secretary.....Des Moines

AUDITOR AND ACCOUNTANT

J. W. Bowdish.....Des Moines

THE VETERINARY BUILDINGS

Officers of Administration

GENERAL OFFICERS

Raymond Allen Pearson, LL. D.....President
Room 104, Central Building.
Edgar Williams Stanton, LL. D.....Vice-President and Secretary
Room 117, Central Building.
Herman Knapp, B. S. A.....Treasurer and Registrar
Room 122, Central Building.
Orange Howard Cessna, D. D.....Chaplain
Room 212, Central Building.
Thomas Sloss.....Superintendent of Buildings and Grounds
Superintendent's Office.
Charles G. Tilden, M. D.....Physician and Sanitary Officer
Hospital Building.
Hazel May Harwood, A. B., A. M.....Adviser to Women
Room 103, Central Building.
Vera Morlan Dixon, B. S.....Assistant Librarian
Room 107½, Central Building.
George Platt Bowdish.....Assistant Purchasing Agent
Room 124, Central Building.
Charles Sabin Nichols, C. E.....Assistant to the Dean of Engineering
Room 315, Engineering Hall.
Minnie R. Rice.....Assistant Registrar
Room 122, Central Building.
Edna E. Walls, Ph. B., B. S.....Assistant to the Dean of Home Economics

DEANS AND VICE-DEANS

Edgar Williams Stanton, LL. D.....Dean of the Junior College
Room 114, Central Building.
Charles Franklin Curtiss, D. S.....Dean of the Division of Agriculture
Room 124, Hall of Agriculture.
Anson Marston, C. E.....Dean of the Division of Engineering
Room 301, Engineering Hall.
Samuel Walker Beyer, Ph. D...Dean of the Division of Industrial Science
Room 299, Chemistry Building.
Charles Henry Stange, D. V. M.....Dean of the Division of Veterinary Medicine
Room 107, Veterinary Building.
Robert Earle Buchanan, Ph. D.....Dean of the Graduate College
Room 101, Science Building.
Catherine J. MacKay, M. S.....Dean of the Division of Home Economics
Room 106, Home Economics Building.
Spencer Ambrose Beach, M. S...Vice-Dean of the Division of Agriculture
Room 201, Hall of Agriculture.
Maria M. Roberts, B. L.....Vice-Dean of the Junior College
Room 218, Central Building.
Harold Edward Bemis, D. V. M.....Vice-Dean of the Division of Veterinary Medicine
Room 108, Veterinary Building.

Officers of Instruction

Pearson, Raymond Allen, President, 1912.
B. S. in Agr., Cornell University, 1894; M. S. in Agr., 1899; LL. D., Alfred University, 1909; D. of Agr., University of Nebraska, 1917.

Stanton, Edgar Williams, Vice-President, Dean of the Junior College, Professor of Mathematics, 1877, 1873.*
B. Sc., Iowa State College, 1872; M. Sc., 1887; LL. D., Coe College, 1904.

Stange, Charles Henry, Dean of the Division of Veterinary Medicine, Professor of Veterinary Medicine, 1909, 1907.
D. V. M., Iowa State College, 1907.

Bemis, Harold Edward, Vice-Dean of the Division of Veterinary Medicine, Professor of Veterinary Surgery, 1915, 1908.
D. V. M., Iowa State College, 1908.

Murphey, Howard Sylvester, Professor of Veterinary Anatomy and Histology, 1913, 1909.
D. V. M., Ohio State University, 1908.

Bergman, Henry Dale, Professor of Veterinary Physiology and Pharmacology, 1916, 1910.
D. V. M., Iowa State College, 1910.

Murray, Charles, Professor of Veterinary Investigation, 1917, 1908.
Ph. B., Drake University, 1906; B. S., Iowa State College, 1910; D. V. M., 1912.

Benbrook, Edward Antony, Professor of Veterinary Pathology and Bacteriology, 1919, 1918.
V. M. D., University of Pennsylvania, 1914.

Rice, Charles Dobbs, Associate Professor of Veterinary Pathology and Bacteriology, 1917, 1913.
B. S., Georgetown College, 1902; D. V. M., Iowa State College, 1913.

Covault, Clarence Hartly, Associate Professor of Veterinary Medicine, 1917.
D. V. M., Ohio State University, 1911.

Guard, Willard F., Associate Professor of Veterinary Surgery and Obstetrics, 1916, 1914.
D. V. M., Ohio State University, 1912.

Aitken, William Alexander, D. V. M., Assistant Professor of Veterinary Anatomy and Histology, 1920, 1919.

Walsh, Frank Edward, D. V. M., Assistant Professor of Veterinary Medicine, 1920, 1919.

McNutt, George William, D. V. M., Instructor, Veterinary Anatomy and Histology, 1920, 1919.

Biester, Harry Edward, D. V. M., Instructor, Veterinary Pathology and Bacteriology, 1920.

Judisch, George, Phar. D., Instructor, Veterinary Pharmacology, 1912, 1901.

Guthrie, Joseph Edward, Professor of Zoology, 1917, 1901.
B. S., University of Minnesota, 1900; M. S., 1901.

Knapp, Herman Registrar, 1887, 1883.
B. S. A., Iowa State College, 1883.

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* First date after the name indicates date of appointment to professional position; the second date, when the first fails to do so, indicates the date of first appointment in the College.

Lincoln, James Rush, Professor of Military Science, 1884, 1883.
Brigadier General, U. S. Vol., 1898-1899; Major, U. S. A., 1918.

Mayser, Charles William, Professor of Physical Training, 1919, 1915.

Mortensen, Martin, Professor of Dairying, 1909.
B. S. A., Iowa State College, 1909.

Noble, Alvin Buell, Professor of English, 1898.
B. Ph., State University of Iowa, 1887.

Pammel, Louis Hermann, Professor of Botany, 1889.
B. Agr., University of Wisconsin, 1885; M. S., 1889; Ph. D., Washington University, St. Louis, 1898.

Shearer, Phineas Stevens, Professor of Animal Husbandry, 1919, 1912.
B. S. in A. H., Iowa State College, 1912.

Brown, Frank Emerson, Associate Professor of Chemistry, 1918, 1917.
A. B., Kansas State Normal School; S. B., University of Chicago, 1913; Ph. D., 1918.

Peisch, A. Marcus, Associate Professor of Economic Science, 1919, 1917.
A. B., University of Wisconsin, 1915.

Stephenson, Richard F., Associate Professor of Animal Husbandry, 1919.
B. S., Iowa State College, 1915; M. S., 1916.

Nelson, Victor Emanuel, Physiological Chemistry, 1919.
B. S., University of Wisconsin, 1912; M. S., 1914.

Admission to College

Every student entering college must file an official statement of his previous educational work. Applications for credential blanks and all communications with regard to admission should be addressed to the Registrar. Official high school records should be filed with the Registrar at the close of the school year, if possible, and not later than the first Monday in September, December, or March. The Registrar will determine the value of all credentials and will notify the applicant of their acceptance. He will also assign the applicant for admission to his position in the course desired. Continuance in such assignment will be conditioned upon the student's doing creditable work.

Applicants for admission to all collegiate courses should be at least sixteen years of age.

A student may enter the College at the beginning of any quarter. Those wishing to enter at the beginning of the second or third quarter should find out from the Registrar whether entrance at that time is feasible in their case. The regular classes begin with the opening in September and the student is urged to commence at that time. Some Freshman subjects are, however, begun in each quarter. The College desires to emphasize the importance of thorough preparation, particularly in subjects that are to be continued in College. Since without thorough preparation satisfactory progress is impossible, students are urged to review carefully, before entering College, algebra through quadratics and English composition and grammar. Those desiring admission should examine *Requirements for Admission.*

REQUIREMENTS FOR ADMISSION

The requirements for admission are stated in terms of units. An entrance unit is defined as thirty-six weeks of high school work in one subject of study, with five class periods per week, each not less than forty minutes in length. Each laboratory period should be at least eighty-five minutes in length. A unit is equivalent to two semester credits. The following studies are necessary prerequisites to the taking of the collegiate courses offered by the Division of Veterinary Medicine.

(A) ENGLISH, three (3) units.
HISTORY, CIVICS, ECONOMICS, one (1) unit.
MATHEMATICS:
ALGEBRA, one (1) unit.
PLANE GEOMETRY, one (1) unit.

(B) Enough work from the five principal groups of subjects, viz.: English, Foreign Language, History-Civics-Economics group, Mathematics and Natural Science to make a total of eleven (11) units including the units enumerated above under (A).

(C) ELECTIVES. Whatever work to the extent of four additional units the high school certifies as accepted by that school for graduation; subject to the definitions of units of entrance credit adopted by the North Central Association of Colleges and Secondary Schools, or in the bulletins published by the Iowa State Board of Education.

Gymnasium and Athletic Field

1. Admission to Graduates of IOWA HIGH SCHOOLS

A graduate of a public four-year high school in Iowa, who presents fifteen units of work, will be admitted without examinations to such collegiate work as he is prepared to pursue, upon presenting a certificate signed by the Superintendent or the Principal, specifying the branches of study and credits included within his high school course of study. A graduate of any private four-year high school, seminary, or academy approved by the Board of Secondary School Relations will be admitted on the same basis.

If a high school graduate does not meet present admission requirements to the course he desires to pursue the deficiency must be removed by studies taken at the College. Credit earned in removing such deficiencies will not be applied toward college graduation in the specific course chosen.

2. Admission to Graduates of High Schools in Other States

Graduates of high schools accredited by the state universities or other state accrediting agencies will be admitted by certificate. High school graduates, whose certificates would be accepted without examination by reputable colleges in the state in which they are located, provided these states have no accrediting system, will be admitted by certificate. Graduates of other schools will be required to take entrance examinations.

3. Admission to Non-graduates of High Schools

The student not a graduate presenting credits from a public four-year high school or a private four-year high school, academy, or seminary, approved by the Board of Secondary School Relations.

(A) Such student will not be admitted unless he presents as many as fourteen (14) acceptable units by certificate, by examination, or by both certificate and examination; and he is to be conditioned to the extent of enough units to bring the number up to fifteen (15) units. These units must be according to specified list of units found under pre-technical work on page 8.

(B) Entrance conditions must be removed within one calendar year after the student's admission, or before he registers for his second year's work; and the student is to be registered at once for the work in which he is deficient as a part of the normal amount of work allowed to students. If, however, he shows by the end of the first term that he is an unusually capable student, he may be permitted under the faculty regulations to register for additional work during the following term.

(C) Students admitted with conditions are not to be permitted to remove these conditions within the allotted one year by taking entrance examinations in subjects in which they have been taking college courses for credit.

If a student presenting the required entrance credit in a given subject fails to do satisfactory work in the succeeding college course in that subject, he is not be assigned to a pre-technical course in the subject with a view of securing college credit for such pre-technical course.

4. Admission by Examination and on Other Evidences of Proficiency

Students who desire to enter by examination and who present satisfactory evidence that they have devoted sufficient time to preparation, will be given examinations in any subject required for entrance.

Students desiring to enter by examination will be expected to pass examinations in the required and elective subjects, according to work outlined on page 8.

COLLEGE ENTRANCE EXAMINATIONS

Certificates of entrance examinations passed for admission to reputable universities and colleges, and certificates of examination passed under the direction of any of the College Entrance Examination Boards and the Regents of the State of New York, may be accepted as are accepted the certificates from our own accredited schools.

ACADEMIES AND PREPARATORY SCHOOLS

Credits certified from private secondary schools such as academies and seminaries, and from college preparatory schools, shall be estimated in accordance with the definition of the entrance unit and on the standard of four years of preparation and residence. College academies or preparatory departments conforming in their organization with the organization of the four-year accredited high school shall be treated as accredited schools, if the colleges themselves are regarded as standard colleges.

TEACHERS' CERTIFICATES

A certain number of entrance units may be granted upon the basis of a First Grade Uniform County Certificate; and on first grade, second, grade, or life diploma certificates granted by the State. For full information address the Registrar for a special bulletin.

5. Admission to Advanced Standing for High School Work

Advanced, or college, credit may be given for extra high school or secondary school work only on the following conditions:

1. The number of units reported and accepted must be in excess of sixteen (16).
2. There must be a rigorous examination for college credit.

ENTRANCE EXAMINATION PROGRAM

Admission to the entrance examinations is by permit. Permits may be obtained of the Registrar, Room 125, Central Building.

A representative from each department will conduct the examinations in Room 102, Central Building, on Thursday and Friday preceding classification.

Any student finding a conflict in his program should report to the Registrar for adjustment.

Thursday:

Algebra	8-10	A. M.
Plane Geometry	8-10	A. M.
English	10-12	A. M.
Latin, first year	1-3	P. M.
Latin, second year	1-3	P. M.
Botany	3-5	P. M.

Friday:

Algebra	8-10	A. M.
Solid Geometry	8-10	A. M.
History, General	10-12	A. M.
History, American	10-12	A. M.
History, English	10-12	A. M.
Civics	1-3	P. M.
Physiology	1-3	P. M.
Physiography	1-3	P. M.
Physics	3-5	P. M.
Latin, first year	3-5	P. M.
Latin, second year	3-5	P. M.

The Registrar will arrange for the other entrance examinations required by the candidates for admission.

Swimming Pool, Men's Gymnasium

Advanced Standing

Students of other colleges will be admitted to advanced standing in this college under the following conditions:

First, they must present a letter of honorable dismissal.

Second, the entrance requirements to this college must be fully satisfied (see Admission under Entrance Requirements).

Third, it is required that all credits from other colleges be sent by the proper officers to such institutions, duly certified, to the Registrar of this College; such certificates to include number of weeks the student has pursued the studies in question and the number of hours' credit received in each semester, as well as the portion of the subject covered.

No standing shall be accepted from any high school or academy for regular four-year college work. It is the privilege of any student to ask for and receive examination in any subject taught in any department of the College, provided that he can show to the satisfaction of the head of the department that he has made the necessary preparation.

Students from Other Colleges

Work of recognized merit that has been taken in colleges and universities of good rank and standing will be credited for an equivalent amount of work so far as it applies in any course offered in this College.

Students taking work in this way will present official records of their work to the advanced standing committee at the office of the Registrar to ascertain the credits to be allowed. It will be understood between the applicant and the committee that the credits are only provisionally accepted and that their final acceptance depends wholly upon the student maintaining a good average standing for one year at the College.

Fees and Expenses

The entire expenses of a student need not exceed $500.00 per year.

Honor Scholarships: The State Board of Education has provided one honor scholarship for each four-year approved high school in the state. This scholarship represents the same value in cash whether presented at the State College or at any one of the other state institutions. It is worth $20.00 for the year, and at the Sate College this amount will be allowed on fees.

As soon as any school has made its nomination for the scholarship, the school authorities are expected to report the name and address of the nominee, together with a signed certificate of scholarship, to the Secretary of Secondary Schools, State Board of Education, Des Moines, Iowa, who will approve the nomination if the conditions have been met, forward the proper credentials to the candidate, and send the certificate of credits to the institution elected.

Nominations should be made in June, and must be made not later than August 1st of each year.

Tuition: The Code of Iowa reads as follows: "The tuition in the College herein established shall be forever free to pupils from the state over sixteen years of age, who have been residents of this state six months previous to their admission."

To non-resident students a tuition fee of $17.00 per quarter is charged.

Tuition Scholarships: The form of Tuition Scholarships is intended only for those students from other states, who, without such aid, cannot secure a college education. The conditions on which this aid is granted are as follows: (1) The applicant must be in need of financial assistance; (2) Must be of good moral character; (3) Must give evidence of good preparation; (4) the recipient must give evidence of ability, by good standing in one of the regular courses leading to the bachelor's degree.

The aid which is given from the Tuition Scholarships Fund is not regarded as a loan. If a student who receives this aid is able to return the amount in later years, it will be credited to his accounts on the books of the College Treasurer, and the sum will be put into the Tuition Scholarship Fund of the College for the use of future students.

All applications for these scholarships must be made on the uniform blanks furnished by the President.

Thirty-eight tuition scholarships are available: eight to each collegiate class, two to sub-collegiate students, and four to students from foreign countries.

International Scholarships are granted to students from the countries of our allies in the war; said scholarships to exempt each of such students from the payment of fees and tuition to an amount not to exceed $100 annually.

Incidental and Janitor Fees: The regular incidental and janitor fee for the quarter is $6.00 for all students who complete their classification during the regular classification period. Beginning with the first day on which classes are held, the fee for college students will be $8.00 plus $1.00 additional for each day thereafter until the classification is completed. This fee is used as follows: hospital, $2.00; students' repair fund, $1.00;

incidental and janitor service, balance. Students who register for part-time work, instead of paying the full incidental and janitor fee, may pay the hospital fee of $2.00, and 50c per credit hour for the hours or fraction of hours work taken.

All men students (except those in Graduate College) are required to pay a fee of $1.00 per quarter. This fee entitles the student to the general use of the gymnasium including the lockers and shower baths. (Men who are required to classify in Physical Training shall pay a fee of $1.00 per quarter in addition to this fee.)

If the student severs his connection with the College, he shall obtain an order to settle from the Vice-president, Room 114 Central Building, which order shall be filed with the Treasurer. The refund will be made at the close of the quarter.

Laboratory Fees: Laboratory fees at the actual cost of breakage and usage are charged to the students, the Treasurer's receipt for such fees being required before the students are admitted to laboratories. For the amount of the fee in any study, see description of the study under its department. All refunds on laboratory fees will be made at the close of the quarter.

Diploma Fee: A diploma fee of $5.00 is payable before graduation.

Exemption from Fees: All honorably discharged soldiers and sailors of the World War shall be exempt from fees to the amount of $20 per year, said amount to be divided as follows: $6.00 incidental and janitor fee for the Fall quarter; $6.00 incidental and janitor fee and $1.00 general physical training fee for the Winter and for the Spring quarters. Students claiming this exemption shall show their discharge papers at the Treasurer's office when they enter college.

Board and Room: All men students can secure furnished rooms and board in clubs or private families adjacent to the college grounds at $6.00 per week. In order that undesirable rooms and houses may be avoided, young men students should consult the Secretary of the Young Men's Christian Association, Alumni Hall, Ames, Iowa. For sanitary or other reasons the college authorities reserve the right to forbid students from rooming in any particular house.

For the information of students, clubs, and interested private families the Committee on Student Accommodations has prepared standard regulations to assist in the management of houses which furnish rooms or board to students. These regulations are for the use of members of the instructional and clerical staffs and other members of the college community when reference to standard practice is desirable. Houses accommodating both students and others who are not students are expected to observe regulations for houses accommodating students. Copies of these regulations may be secured from the President's office, the Y. M. C. A. Secretary, or the Chairman of the Committee on Student Accommodations.

Text Books: All text books and stationery may be purchased at the College Book Store at about 20 per cent below the average retail price.

Note: Prospective Freshmen should carefully consider the cost of the first year. No one should think of entering college unless he has money enough in his own right or from friends to meet his expenses in large part for his Freshman year. If he goes out of his Freshman year in debt he is quite sure to be seriously embarrassed for the remainder of his college course. Provision hould be made to meet college bills with the same business-like promptness with which one expects to meet other bills.

Freshman Expenses

Taking into consideration the items named under Fees and Expenses, the following is an approximate estimate of the expenses of a Freshman for each of three quarters of the college year:

	Minimum Amount	Maximum Amount
Board (12 weeks)	$60.00	$72.00
Room rent (12 weeks—2 in a room)	24.00	45.00
Laundry	6.00	8.50
Incidental and Janitor Fee	6.00	8.00
Laboratory Fees	10.00	17.00
Books and Equipment	13.00	30.00

For engineering students, the minimum estimate should be increased fifteen dollars, under Books and Equipment, for drawing instruments and material.

All men pay a general Physical Training fee of $1.00 per quarter.

Members of the R. O. T. C. will have their uniforms furnished by the government. All other students will receive information as to prices from the commanding officer of the Military department.

In addition to these items, at the beginning of the Freshman year each man student will be required to purchase a gymnasium suit for $5.00; and each woman student a gymnasium suit for $7.50.

The student is also advised to purchase a student's activity ticket and to pay class dues.

The military and gymnasium suits and drawing equipment will be serviceable for the entire course.

If a student is non-resident of the state, $17.00 per quarter should be added for tuition.

The incidental and janitor fee, laboratory fees, books and equipment, gymnasium outfit, and some payment toward room rent and board are required in advance.

VETERINARY LIBRARY READING ROOM

Classification and Standing

Junior and Senior College: The students are classified in Junior and Senior colleges. The Junior college is composed of all students in the Freshman and Sophomore years; the Senior college, of all students in the Junior and Senior years.

Amount of Work: The amount of work in each course is expressed in credits, a credit meaning one recitation a week, or its equivalent, throughout the quarter. It is considered that a one-hour recitation or lecture will require as much time including preparation as a three-hour laboratory, and therefore it is given the same credit. Any two-hour laboratory period is equivalent to two-thirds of a three-hour laboratry.

Number of Credits: No student shall be allowed to classify in more credits than are specified in the catalogue for the quarter of the course taken, unless he has an exceptionally high record in his previous college work, and then only after consent is secured from the classifying Dean and the Head of the Department concerned. The student will be allowed to drop such extra work only upon permission of the classifying Dean; he will be required to drop it in case this or any other work in his schedule is being carried unsatisfactorily. A "condition" or a "not pass" secured in such extra work shall stand as a record, and shall be considered in choosing fraternity members, but an elective shall not be held against the student for graduation.

In general, students failing in any portion of a quarter's work will not be allowed to take full classification for the next quarter.

Classification: No student shall be admitted to any class or dropped from it, except by authority of the classifying officer.

Conflicts: Students shall not classify in conflicting studies without the approval of the classifying officer.

Standings: All the standings are based on the scale of 100. The passing grade is 75. A student receiving from 60 to 74 per cent inclusive in any course is conditioned, and allowed to make up the condition under the direction of the head of the department.

Back Studies: Students shall be classified in back studies in all cases in which such studies are taught, subject to the first rule under Number of Credits. Any exception to this rule must be for good and sufficient reason, approved by the President of the College and the Dean.

Changing Course: A student will not be permitted to change from one course to another who has a "condition" or "not pass" in a subject not common to the two courses; or if he has more than one "condition" or "not pass" in subjects common to the two courses.

Senior Year: No student shall be considered a candidate for graduation who at the beginning of the Spring quarter of the Senior year has more than twenty hours of work to complete his course of study. If the uncompleted work is not offered in the Spring quarter, it shall be passed and reported to the Recorder not later than April 1st.

Division of Veterinary Medicine

Dean Stange, Veterinary Building
Vice-Dean Bemis, Veterinary Building

The Division of Veterinary Medicine offers the following courses:

Four-Year Course: Veterinary Medicine....p. 17
Six-Year Course: Animal Husbandry and Veterinary Medicine....p. 20
Six-Year Course: Science and Veterinary Medicine....p. 18

The Division of Veterinary Medicine offers a four-year course leading to the degree of Doctor of Veterinary Medicine, and combined six-year courses with either the Division of Industrial Science or the Department of Animal Husbandry, and leading to both B. Sc. and D. V. M. degrees. The Veterinary Division consists of five educational departments, the head of each department being a man of broad experience in the particular branches of medical science which the department represents.

The following departments are included in the Division:

Department of Anatomy....p. 20
Department of Pathology and Bacteriology....p. 22
Department of Physiology and Pharmacology....p. 23
Department of Surgery....p. 24
Department of Medicine....p. 21

The faculty of the Division of Veterinary Medicine consists of the Dean of the Division, together with the professors at the head of departments, the associate and assistant professors in the departments, and instructors. Representatives (to the number indicated) of the following departments outside of the Veterinary Division, in which the veterinary students do a part of their work, are considered members of the Veterinary faculty: Chemistry (1), Botany (1), Animal Husbandry (1), Dairy (1), English and Economic Science (1), and Zoology (1).

Aside from the strictly educational departments in the Division, there is also the Department of Research in Animal Diseases which gives the student rare opportunity to observe that phase of veterinary science in which this department is engaged.

Aside from the facilities which belong especially to the Veterinary Division, the equipment for instruction in animal husbandry, consisting of large flocks and herds of carefully selected breeds of live stock, helps to render practical instruction very efficient. The most perfect types of the different breeds are used for class work. In this way the work in veterinary medicine is linked with that in agriculture, an arrangement which proves to be of inestimable value to veterinarians. The fact that the College is located in the richest live stock country in the world provides a rare opportunity for the veterinary student to study this phase of animal industry; it also enables him to observe a wealth of clinical cases both at the College Hospital, and under general practice conditions by means of the Ambulatory Clinic.

Work in Botany, Chemistry, Zoology, and other related sciences is adequately provided for in the special buildings for the accommodation of these several departments of college work. Each branch of study is presented to the student by a specialist.

Candidates for graduation must be twenty-one years of age, of good

character, and must have passed examinations in all the required subjects in the course, to secure the degree of Doctor of Veterinary Medicine.

The following are a few of the many openings available to graduates:

General Practice: In view of the fact that the national live stock valuation is estimated at $5,008, 327, 000, it becomes obvious that the graduate possessing fitness and aptitude for live stock work will meet with a ready demand and receive substantial compensation for his services.

Bureau of Animal Industry: Veterinarians are in demand for inspection work in the Bureau of Animal Industry, United States Department of Agriculture, at substantial salaries.

Army Veterinary Service: Excellent opportunities are now offered to young veterinarians in the United States Army. The Army Veterinary Corps is organized as a part of the Medical Department of the Army, and army veterinarians receive the rank, pay, and allowances of commissioned army officers, entering with the rank of lieutenant at $1,700 per year, with excellent opportunity for advancement in rank, with corresponding increases in salary and allowances. These positions are very desirable, and include a wide range of professional work.

Municipal and State Work: Owing to the fact that the larger cities are rapidly inaugurating systems of milk and meat inspection, there is an increasing demand for competent veterinarians drilled in bacteriology and pathology. A large number of State positions are also open, on account of the rigid laws governing inter-state shipment of live stock which are being enacted by the various states.

Sanitation: The value of the educated veterinarian as a sanitarian is being recognized and positions are open in this field.

Education and Research: The demand for men capable of doing investigation work in animal diseases, associated work in connection with State Experiment Stations, and of filling various teaching positions in agricultural and veterinary colleges, has been greater than the supply.

Commercial Work: The lines of commercial work which demand trained veterinarians are increasing yearly. These include positions with railway companies, live stock concerns, in biological laboratories, pharmaceutical houses, etc. The demand for qualified veterinarians exceeds the supply, and many graduates go directly from college to positions paying $150 per month and upward.

Course in Veterinary Medicine

Leading to the degree of Doctor of Veterinary Medicine.

FRESHMAN YEAR

Fall Quarter	Credits[2]	Winter Quarter	Credits	Spring Quarter	Credits
Gross Anatomy Vet. Anat. 110[1]	4	Gross Anatomy Vet. Anat. 120	5	Gross Anatomy Vet. Anat. 130	5
Microscopic Anatomy Vet. Anat. 111	3	Microscopic Anatomy Vet. Anat. 121	3	Microscopic Anatomy Vet. Anat. 131	3
Market & Breed Types A. H. 121	2⅓	Market & Breed Types A. H. 122	2⅓	Market & Breed Types A. H. 123	2⅓
Structural Botany Bot. 140	3⅓	English Engl. 301a	2	English Engl. 301b	2
General Chemistry Chem. 511	5	Organic Chemistry Chem. 821	5	Bio-Chemistry Chem. 822	5
Military	1	Military	1	Military	1
Physical Training P. T. 10a	R[3]	Physical Training P. T. 10b	R	Physical Training P. T. 10c	R
	18⅔		18⅓		18⅓

[1] The number refers to the description of the study.
[2] For definition of credit, see page 20.
[3] R indicates that the study is required, without credit, for graduation.

SOPHOMORE YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Gross Anatomy Vet. Anat. 212	5	Gross Anatomy Vet. Anat. 222	5	Gross Anatomy Vet. Anat. 232	6
Bacteriology Vet. Path. 210	4	Bacteriology Vet. Path. 220	4		
Milk Inspection Dy. 66	2	General Pathology Vet. Path. 223	2	General Pathology Vet. Path. 233	5
Comp. Physiology Vet. Phys. 211	4	Comp. Physiology Vet. Phys. 221	4	Comp. Physiology Vet. Phys. 231	4
General Zoology Zool. 1a	3	General Zoology Zool. 1b	3	Embryology Zool. 202	3
Military	1	Military	1	Military	1
Physical Training P. T. 11a	R	Physical Training P. T. 11b	R	Physical Training P. T. 11c	R
	19		19		19

JUNIOR YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Medicine Vet. Med. 313	5	Medicine Vet. Med. 323	5	Medicine Vet. Med. 333	5
Special Pathology Vet. Path. 310	5	Animal Parasites Vet. Path. 325	4	Serum Therapy Vet. Path. 338	3
Materia Medica Vet. Phys. 312	3	Therapeutics Vet. Phys. 326	3	Therapeutics Vet. Phys. 336	4
Pharmacy Vet. Phys. 311	2⅔	General Surgery Vet. Surg. 327	3	General Surgery Vet. Surg. 337	3
Clinics Vet. Surg. 314	3	Clinics Vet. Surg. 324	3	Clinics Vet. Surg. 334	3
	18⅔		18		18
		Elective Animal Breeding A. H. 251	3		

Students appointed to the Reserve Officers' Training Corps will arrange with the classifying dean to substitute R. O. T. C. subjects for certain required subjects in the Junior and Senior years, when the R. O. T. C. subjects exceed the number of electives.

SENIOR YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Clinics Vet. Surg. 413	4	Clinics Vet. Surg. 423	4	Clinics Vet. Surg. 433	4
Medicine Vet. Med. 412	5	Medicine Vet. Med. 422	5	Medicine Vet. Med. 432	4
Special Surgery Vet. Surg. 411	5	Business Law Ec. Sci. 230	3	Animal Feeding A. H. 241	3
Obstetrics Vet. Surg. 414	4	Special Surgery Vet. Surg. 421	5	Special Surgery Vet. Surg. 431	5
		Extempore Speech P. S. 30	2	Food Hygiene Vet. Path. 430	3
	18		19		19
Elective Surg. & Applied Anat. Vet. Anat. 510	2			Elective Adv. Pathology Vet. Path. 531	2
				Serum Therapy Vet. Path. 532	1
				Therapeutics Vet. Phys. 533	1

Course in Industrial Science and Veterinary Medicine (six years)

Leading to the degree of Bachelor of Science and the degree of Doctor of Veterinary Medicine.

The following course is designed to meet the need of those students who wish to secure a thorough foundation in the biological and chemical sciences preliminary to the studying of veterinary medicine. The degree

of Bachelor of Science is granted at the end of the fourth year, and the degree of Doctor of Veterinary Medicine upon the completion of the sixth year. The increased time at the disposal of the student gives an opportunity to prepare himself efficiently for investigational work.

At the present time the better colleges granting degrees in human medicine require two years of collegiate preparation. Veterinary Medicine is quite as exacting in its requirements of students, particularly those who wish to go into governmental or research work. The opportunities open to students well grounded both in science and in veterinary medicine are excellent. Many positions in the Bureau of Animal Industry of the Department of Agriculture, in the experiment stations of our land grant colleges, and in the teaching staffs of our various veterinary schools and agricultural colleges, are opened every year. It has been in the past practically impossible to secure men with the right training. This course is designed to train men for such positions.

FRESHMAN YEAR

Fall Quarter	Credits[2]	Winter Quarter	Credits	Spring Quarter	Credits
General Chemistry Chem. 502[1]	4	General Chemistry Chem. 503	4	Qualitative Analysis Chem. 504	4
Composition Engl. 40a	3	Exposition Engl. 40b	3	Narration & Desc. Engl. 40c	3
German Mod. Lang. 410a	4 or 5	German Mod. Lang. 410b	4 or 5	German Mod. Lang. 410c	4 or 5
Gross Anatomy Vet. Anat. 110	4	Gross Anatomy Vet. Anat. 120	5	Gross Anatomy Vet. Anat. 130	5
Military	1	Military	1	Military	1
Physical Training P. T. 10a	R[3]	Physical Training P. T. 10b	R	Physical Training P. T. 10c	R
Electives	0-1				
	17		17-18		17-18

SOPHOMORE YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Applied Organic Chem. 751a	3⅓	Applied Organic Chem. 751b	3⅓	Agr. Analysis Chem. 752	3⅓
Mathematics Math. 13	4	Mechanics & Heat Phys. 101	3	Extempore Speech P. S. 30	3
Sci. German Mod. Lang. 425a	3	Sci. German Mod. Lang. 425b	3	Sci. German Mod. Lang. 425c	3
Micro. Anatomy Vet. Anat. 111	3	Micro. Anatomy Vet. Anat. 121	3	Micro. Anatomy Vet. Anat. 131	3
Gen. Zoology Zool. 1a	3	Gen. Zoology Zool. 1b	3	Gen. Zoology Zool. 1c	3
Military	1	Military	1	Military	1
Physical Training P. T. 11a	R	Physical Training P. T. 11b	R	Physical Training P. T. 11c	R
		Electives	2	Electives	2
	17⅓		18⅓		18⅓

THIRD AND FOURTH YEARS

The student will classify with the Dean of Veterinary Medicine as a senior college student in Industrial Science and Veterinary Medicine. In the quarter in which he completes the requirements for the bachelor's degree, he shall also register with the Dean of Industrial Science. He shall outline his course of study, guided by the following rules:

1. A minimum of 18 hours per quarter shall be carried.
2. All subjects of the Freshman and Sophomore years of the four-year

[1] The number refers to the description of the study.
[2] For definition of credit, see page 20.
[3] R indicates that the subject is required, without credit, for graduation.

course in veterinary medicine not already taken shall be completed (excepting Chemistry 511, 821, 822, and Zoology 1a, 1b).

3. English 441 or English 442 and at least fifteen hours of free electives, i. e., subjects not required of students pursuing the four-year course in Veterinary Medicine, shall be completed.

The degree of Bachelor of Science will be conferred upon fulfillment of the preceding requirements.

FIFTH AND SIXTH YEARS

The student will classify with the Dean of Veterinary Medicine as a Senior college student in Veterinary Medicine. He shall outline his course in conformity with the following requirements:

1. A minimum of 18 hours per quarter shall be carried.
2. All subjects of the Junior and Senior years of the four-year course in Veterinary Medicine shall be completed.
3. Free electives shall be chosen to fill the number of credit hours to the required 18.

The degree of Doctor of Veterinary Medicine will be conferred upon the fulfillment of the preceding requirements.

Course in Animal Husbandry and Veterinary Medicine

On account of the demand for a course offering degrees in both Animal Husbandry and Veterinary Medicine, a combined course has been outlined so that the student pursuing this course may receive both degrees in six years.

Short Course for Practitioners in Veterinary Medicine

It is proposed to arrange the course so that practitioners may spend a few days at Ames and get the latest and best that is being made available in any state or country.

Definition of a Credit: The amount of work in each study is expressed in credits, a credit meaning one recitation or its equivalent a week throughout the quarter. It is considered that a one-hour recitation or lecture will require as much time including preparation as a three-hour laboratory, and therefore should be given the same credit. Any two-hour laboratory period is equivalent to two-thirds of a three-hour laboratory.

Study Numbers: In each department the studies, for convenience of reference, are given in numerical order.

VETERINARY ANATOMY

Professor Murphey, Anatomy Building, Veterinary Group, Room 117
Instructors Aitken, McNutt; Fellow Wheaton

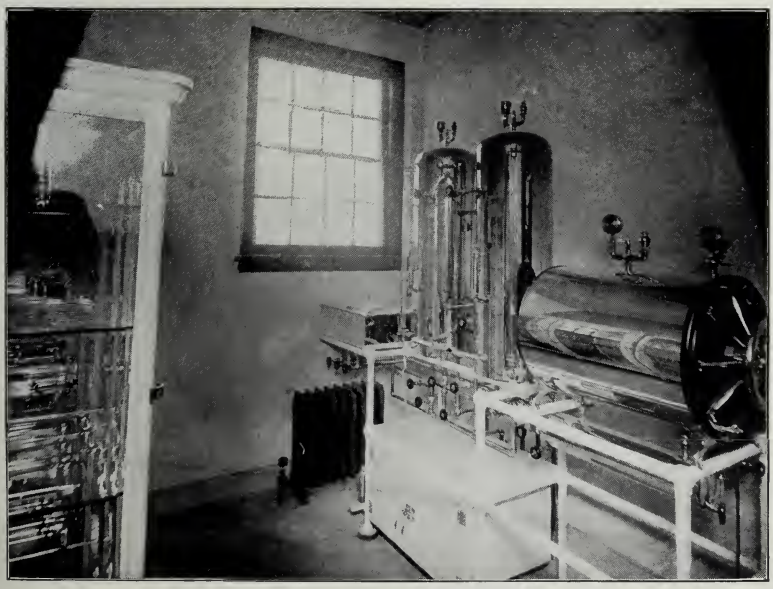
For information concerning the Division of Veterinary Medicine, see page 16.

The Department of Anatomy gives instruction in anatomy to students in either Veterinary Medicine or Animal Husbandry. The laboratories are well equipped. In histology and osteology each student is assigned an individual desk provided with a microscope, 100 permanent mounts of tissue, laboratory notes, and one-half skeleton of disarticulated bones of the horse. The dissecting room is modern, sanitary, and well equipped. All cadavers are preserved. Students in Animal Husbandry prepare for their work in nutrition and stock judging. Veterinary students should have a detailed knowledge of the structure of the domestic animals and birds to understand properly Physiology, Pathology, Diagnosis, Surgery, and Medicine.

The following methods are used in teaching anatomy: didactic instruc

Anatomy Laboratory

Instrument Room and Dispensary



Part of Sterilizing Room

tion, quiz, specimen demonstration, specimen study, lantern slide demonstrations, dissection, sketching, the use of the living horse for palpating and outlining the structures. A large and well selected number of specimens and lantern slides is used in the class and laboratory demonstrations to emphasize the most important structures and their relations from a clinical standpoint. These are also available for student use. In the laboratory special attention is given to fascial compartments, joint pouchings, vaginal sheaths, bursae, and topography. Class work in splanchnology also covers the microscopic anatomy.

The class work is mostly quizzes, with supplemental statements and demonstrations by the instructors to fix the knowledge of the structures of the animal body gained in the laboratory by the student.

Description of Studies

110, 120, 130. **Gross Anatomy, Osteology, Arthrology, Splanchnology, Myology.** Demonstrations; dissection of horse; systemic anatomy of bones, joints, digestive, respiratory, genito-urinary systems. (110) Fall. Rec. 3; lab. 1, 3 hr.; credit 4; fee $1.00. (120) Prerequisite 110. Winter. Rec. ; labs. 3, 3 hr.; credit 5; fee $2.00. (130) Prerequisite 120. Spring. Rec. 2; labs. 3, 3 hr.; credit 5; fee $2.00. Professor Murphey.

111, 121, 131. **Microscopic Anatomy.** Use of microscope. Cells and tissues, morphologically and comparatively. Comparative amounts of parenchyma and supporting tissue. (111) Fall. Lect. 1; labs. 2, 3 hr.; credit 3; fee $2.00. (121) Prerequisite 111. Winter. Lect. 1; labs. 2, 3 hr.; credit 3; fee $4.00. (131) Prerequisite 121. Spring. Lect. 1; labs. 2, 3 hr.; credit 3; fee $2.00. Professor Murphey.

212, 222, 232. **Gross Anatomy, Myology, Angiology, Neurology, Comparative Anatomy.** Systemic anatomy of muscles, fascial, vascular, and nervous systems. Dissection of horse, ox, sheep, pig, dog, chicken. (212) Prerequisite 130. Fall. Rec. 3; labs. 2, 3 hr.; credit 5; fee $3.00. (222) Prerequisite 212. Winter. Rec. 2; labs. 3, 3 hr.; credit 5; fee $3.00. (232) Prerequisite 222. Spring. Rec. 3; labs. 3, 3 hr.; credit 6; fee $3.00.

510. **Surgical and Applied Anatomy.** A demonstration subject. Specimens, lantern slides, dissections before the class, and living animals will be used. Prerequisite, first three years of the Veterinary Course. Fall. Lect. 1; lab. 1, 3 hr.; credit 2; fee $2.00.

610. **Anatomy of Domestic Animals.** (For Animal Husbandry students.) The skeleton, articulations, muscles, digestive, respiratory, and genito-urinary organs of horse and ox. Dissection. Fall. Rec. 2; labs. 2, 3 hr.; credit 4; fee $4.00.

713. **Research in Anatomy.** Problems relating to Animal Husbandry, Physiology, Pathology, and Surgery. Anatomical problems of systemic, topographic, or comparative nature. Labs. 3 or 4; credit 3 or 4. Professor Murphey.

714. **Research in Microscopic Anatomy.** Physiological histology; problems of importance to pathology or those relating to histogenesis or morphology. Professor Murphey.

VETERINARY MEDICINE

Professor Stange, Administration Building, Veterinary Group, Room 106
Associate Professor Covaults; Assistant Professor Walsh

For information concerning the Division of Veterinary Medicine, see page 16.

The study of medicine summarizes and shows the application in practice of the training previously received in Anatomy, Physiology, Pathology, Bacteriology, and Therapeutics. The work is given in the form of lectures and clinical demonstrations and extends throughout the Junior and Senior years. Diagnostic methods employed in the detection of animal diseases are carried out by each student on the various organs and systems of the different species of animals. The surrounding community furnishes an abundance of material for such work. When cases cannot be brought to the hospital, students are taken to the farms and given actual practice in the diagnosis and treatment of the cases under the direct supervision of

an experienced member of the faculty. The latter arrangement provides a large variety of cases and gives opportunity to observe both healthy and diseased animals under natural farm conditions and the student is taught how to overcome difficulties frequently met with on farms where facilities are restricted.

Infectious diseases are considered in detail, diagnosis and methods of control being especially emphasized.

General sanitation and hygiene are taken up with special reference to the most practical means of keeping animals in health and preventing diseases.

On completion of the Senior year the student has not only the theoretical knowledge, but some of the most practical methods of applying such knowledge. The transition from the student to the practitioner presents little difficulty after such training.

Description of Studies

313, 323, 333. **Medicine.** Methods employed in the diagnosis of animal diseases and a consideration of diseases not widely spread. Prerequisites Vet. Anat. 130, 131, 232; Vet. Path. & Bact. 210, 220, 223, 233; Vet. Phys. 211, 221, 231. Fall, Winter, and Spring respectively. Rec. 4; lab. 1, 3 hr.; credit 5 each quarter; fee $2.50 the fall quarter.

314, 324, 334, 413, 423, 433. **Clinics.** From one to three P. M. each day of the week except Sunday, clinics are held in the Veterinary Hospital.

412, 422, 432. **Medicine.** Infectious diseases; their diagnosis, and methods of control; general sanitation and hygiene. Prerequisites 313, 323, 333; Vet. Phys. 326, 336; Vet. Path. 310; Vet. Surg. 327, 337. (412) Fall. Rec. 5; credit 5. (422) Winter. Rec. 5; credit 5. (432) Spring. Rec. 4; credit 4.

VETERINARY PATHOLOGY AND BACTERIOLOGY

Professors Benbrook, Murray, Pathology Building, Veterinary Group, Room 113

Associate Professor Rice, Room 112

Instructor Biester

For information concerning the Division of Veterinary Medicine, see page 16.

The Department of Veterinary Pathology and Bacteriology occupies the northeast building of the veterinary group. Two offices open directly into a private laboratory that is used by those in charge to investigate problems pertaining to their lines of work. A large general student laboratory facing the north, east, and west is well lighted and supplied with individual equipment for a section of thirty students. A pathology preparation room, a bacteriology preparation room and room-incubator open into the main laboratory. A class lecture room to accomodate fifty students is equipped with a combination lantern-slide, microscopic projection, and photomicrographic machine. In the basement are six rooms for the housing of small experimental animals, for the preparation and mounting of museum specimens, and for storage of supplies, and a large storage room for museum specimens used by the department.

The work of the department consists of a systematic study of the causes of disease and the manner in which these causes bring about alterations in the anatomical structure and chemical and physiological activities of animal tissues. The application of this study renders diagnosis more accurate and forms the foundation for rational therapeutics.

Description of Studies

210, 220. **General and Pathogenic Bacteriology.** Morphology, classification, cultivation, and physiologic characters of bacteria. Principles of in-

Pathology and Bacteriology Laboratory

PHYSIOLOGY LABORATORY

fection and immunity. Fall and Winter respectively. Rec. 2; labs. 2, 3 hr.; credit 4; fee $2.50 each quarter.

223, 233. **General Pathology.** The causes of disease and their effects upon the anatomical and chemical relations and physiological activities of the body. Prerequisites 210, 220, Vet. Anat. 130, 131. (223) Winter. Lect. 2; credit 2. (233) Spring. Lect. 3; labs. 2, 3 hr.; credit 5; fee $4.00 Spring quarter.

310. **Special Pathology.** Etiology, pathogenesis, lesions and results of disease in organs or systems of organs; also specific infectious diseases. Prerequisite 233. Fall. Rec. 4; lab. 1, 3 hr.; credit 5; fee $5.00.

325. **Animal Parasites.** Classification, life history, and effect produced by the principal internal and external parasites of domestic animals. Prerequisite Zool 1b. Winter. Rec. 3; lab. 1, 3 hr.; credit 4; fee $2.00.

338. **Immunity and Serum Therapy.** Theories of immunity and immunization; preparation of bacterins, vaccines, and antisera; serum tests in the diagnosis of disease. Prerequisite 220. Spring. Rec. 3; credit 3.

430. **Food Hygiene.** Designed to meet the requirements of federal, municipal and rural meat inspection; also milk and dairy inspection and hygiene. Prerequisite 310. Spring. Rec. 3; credit 3.

531. **Advanced Pathology.** (Elective for Seniors.) Deals with phases of pathology not taken up in 233 and 310. Prerequisite 310. Spring. Lect. 2; credit 2. Professor Benbrook.

532. **Laboratory in Immunity and Serum Therapy.** Supplementary to 338 and elective to students taking 338. Spring. Lab. 1, 3 hr.; credit 1; fee $3.00. Professor Murray.

634. **Livestock Sanitation and Disease.** (For Agricultural students.) Prerequisite Bact. 3. Spring. Rec. 3; credit 3.

635. **Poultry Parasites, Diseases, and Hygiene.** (For Poultry Husbandry students.) Spring. Rec. 2; credit 2.

715. **Research in Pathology.** (For students of the Graduate College.) Prerequisite 310 or equivalent. Professor Benbrook.

716. **Research in Bacteriology.** (For students of the Graduate College.) Prerequisite 220 or equivalent. Professor Murray, Associate Professor Rice.

Post Mortem Pathology. Conducted in coöperation with the Departments of Medicine and Surgery and supplementary to Path. 310 and all phases of clinical work.

VETERINARY PHYSIOLOGY AND PHARMACOLOGY

Professor Bergman, Physiology Building, Veterinary Group, Room 100
Instructor Judisch; Student Assistants Neuzil, Wilder

For information concerning the Division of Veterinary Medicine, see page 16.

The southeast building of the Veterinary group is devoted to work in Physiology, Pharmacy, Materia Medica, and Therapeutics. This building was planned for the investigation and teaching of physiological and pharmacological subjects, and is admirably arranged and equipped for the pursuance of general or research work along these lines.

In the general laboratories, students are provided with individual equipment as far as possible, and thus self-reliance and individual responsibility are developed. The laboratories have been newly equipped and are thoroughly up-to-date. The latest apparatus for practical physiological, pharmacological, or pharmaceutical demonstration and laboratory work is available.

Before attempting a proper conception of diseased conditions it is necessary to have an understanding of the normal functions of the body structures. The purpose of the work in Physiology is to make a detailed study of the normal functions and activities of the cells, tissues, organs, and systems constituting the animal body. The work is presented in the form of lectures, recitations, demonstrations, and practical laboratory work in which the chemical and physical processes of the animal body are

considered in logical order. The lecture work is supplemented by the use of dissected specimens, practical demonstrations, and drawings. The laboratory work is devoted to the study of the respiratory, circulatory, muscular, and nervous systems; also digestion and absorption, and the circulating fluids of the body.

As Pharmacy and Materia Medica are prerequisite to Therapeutics, these subjects are considered in the order named; the work is presented as lectures, recitations, laboratory, and demonstration work.

Description of Studies

211, 221, 231. **Comparative Physiology.** Physiology of blood, lymph; circulatory, respiratory, muscular, and nervous systems; digestion, absorption, metabolism, secretion, excretion, ductless glands, nutrition. Fall, Winter and Spring respectively. Lect. and rec. 3; lab. 1, 3 hr.; credit 4; fee $1.50 each quarter.

311. **Pharmacy.** Processes and principles, official drugs and chemicals; their solubility and incompatibility. Preparation of official preparations. Prescription writing and pharmaceutical arithmetic. Fall. Rec. 2; lab. 1, 2 hr.; credit 2⅔; fee $1.50.

312. **Materia Medica.** Definitions and discussions of the composition of drugs, classifications, official preparations, incompatibilities, combinations, and the forms of administration. Fall. Rec. 3; credit 3.

326, 336. **Therapeutics.** Modes of action of drugs; their absorption, elimination, dosage, indications, and contra indications for use; methods and time of administration. Prerequisites 211, 221, 231, 311, and 312. Winter and Spring respectively. Credit 3 and 4.

533. **Advanced Therapeutics.** Selected work especially arranged to meet the needs of Senior veterinary students planning upon entering active practice. Prerequisites 326 and 336. Spring. Lect. 1; credit 1.

611. **Comparative Physiology.** (For Agricultural students.) Physiology of the blood, lymph, circulatory and respiratory systems, ductless glands, digestive tract, and organs of elimination. Prerequisite Vet. Anat. 610. Fall. Lect. and rec. 3; credit 3.

710, 711, 712. **Comparative Physiology.** (For Agricultural students.) Minor work for graduate students in agriculture, doing major work in general nutrition, production problems, animal feeding, breeding, etc. Credit 3 or 5 as arranged. Fall, Winter, and Spring respectively. Professor Bergman.

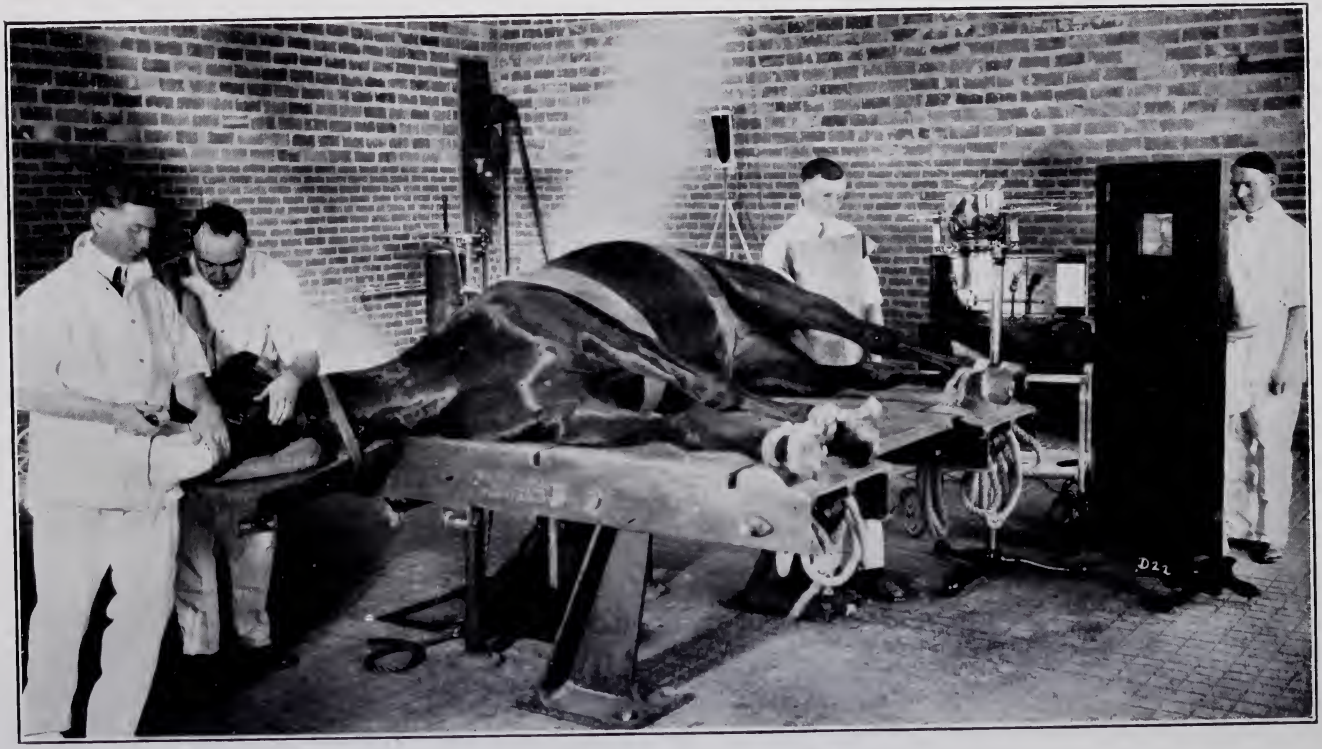
715. **Research in Physiology.** Research in physiological subjects relative to veterinary science. Professor Bergman.

VETERINARY SURGERY

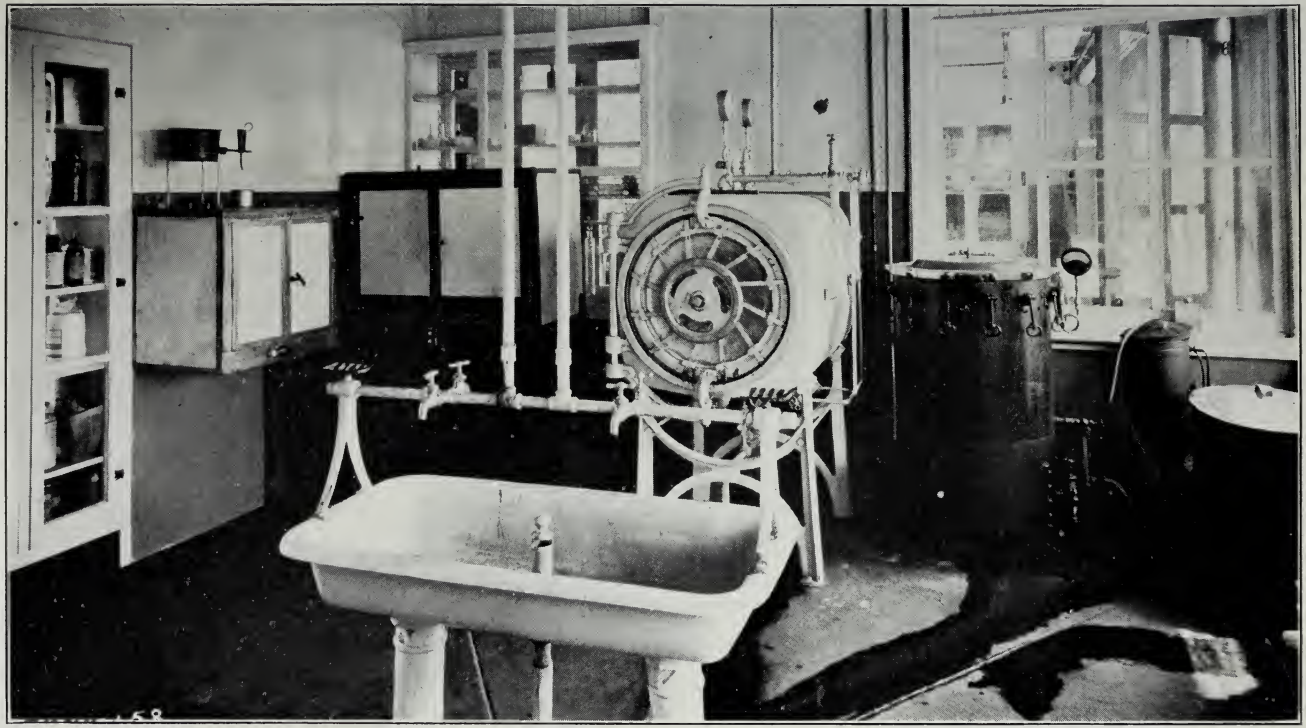
Professor Bemis, Administration Building, Veterinary Group, Room 108
Associate Professor and House Surgeon, Dr. Guard
Pharmacist, Anderson

For information concerning the Division of Veterinary Medicine, see page 16.

The Department of Surgery is especially well equipped for its teaching. The hospital is 160 feet long by 60 feet wide, has a stall capacity for 42 large animals, 22 dogs, and other small animals, and contains three operating rooms. The largest, 65 by 30 feet, is used for examining animals as they are admitted, and for minor operations and treatment. Joining it is a clinical amphitheatre; next to this is the third operating room for large animals, equipped with a hydraulic operating table, X-ray apparatus, and other conveniences. Between the operating room and clinic room is a dispensary and instrument room. On the upper floor, near the kennels, is a small animal operating room equipped with white enamel furniture; also operating instruments and modern steam sterilizers for water, instruments, and dressings.



Operating Room for Large Animals



Research Sterilizing and Media Room

During the school year more than eight thousand cases, including a wide range of surgical conditions, are operated upon and treated in the clinics, each case being assigned to a Senior student with one or more Junior assistants. All operations are performed by the professors in charge, and the after treatment is always under their direction, the idea being that the clinical cases are in no way experimental, but that they shall be treated as similar cases are to be treated later in practice.

All the class room work in surgery is conducted in the amphitheatre in the hospital building, where animals affected with conditions under discussion as well as instruments and apparatus to be used in diagnosis, treatment, or restraint, can be brought before the class. Clinic cases are constantly used to correlate the theoretical and the practical.

Description of Studies

314, 324, 334. **Clinics.** Students are required to assist in daily examination and treatment of hospital cases, in compounding prescriptions and in post mortem examinations. Prerequisite same as 327. Fall, Winter, and Spring respectively. Labs. 6, 2 hr.; credit 3 each quarter.

327, 337. **General Surgery.** Class room instruction supplemented by clinical instruction in the principles of surgery, surgical technique and lameness. Prerequisite first two years of Vet. Course. (327) Winter. Rec. 3; credit 3. (337) Prerequisite 327. Spring. Rec. 3; credit 3.

411, 421, 431. **Special Surgery.** A study of the surgical diseases of the various regions of the body, including dentistry and principles of horseshoeing. Prerequisite 337. Fall, Winter, and Spring respectively. Rec. 4; lab. 1, 3 hr.; credit 5; fee $4.00 each quarter.

413, 423, 433. **Clinics.** Students act as assistants to the clinical professors in the actual treatment of clinical cases, and in post mortem examinations. Prerequisite 334. Fall, Winter, and Spring respectively. Labs. 6, 2 hr.; credit 4 each quarter.

414. **Obstetrics.** Principles and practice of obstetrics. Especial attention given to the subject of sterility. The clinics furnish many actual cases. Prerequisites Vet. Anat. 232, Vet. Phys. 231, and Zool. 202. Fall. Rec. 4; credit 4.

612. **Unsoundnesses of the Horse.** (For Agricultural students.) Anatomy and physiology of the foot and limbs; common unsoundness of the horse; principles of shoeing. Prerequisite Vet. Anat. 610. Fall. Rec. 2; credit 2.

633. **Obstetrics.** (For Agricultural students.) A study of reproduction, sterility, hygiene of pregnant animals, and care of new born animals. Prerequisites Zool. 201, Vet. Anat. 610, and Vet. Phys. 611. Spring, Rec. 1; credit 1.

717. **Research in Surgery.** Special problems connected with surgical conditions, surgical technique, and sterility of animals. Labs. 2 or 3 hr.; credit 2 or 3. Professor Bemis.

VETERINARY INVESTIGATION

Raymond A. Pearson, LL. D.....President
C. H. Stange, D. V. M.....Director
Chas. Murray, B. S., D. V. M.....Professor
L. E. Willey, D. V. M.....Associate Professor
S. H. McNutt, D. V. M.....Associate Professor
Paul K. Purwin.....Laboratory Assistant

The department is being supported by special appropriations made by the legislature, and laboratories and experimental animal rooms are equipped for this special work. There are but few animal diseases entirely understood, and many are understood in no particular. It is the object of this department to investigate such diseases with the view of working out some method by which they can be controlled or eradicated.

One feature of the work of this department is the diagnosis of disease by laboratory methods and examination of tissues. Veterinarians and livestock owners are encouraged to send to the laboratory tissues and

materials from doubtful cases. Careful and painstaking examination of these is made, and animal inoculations are carried out for those cases which promise something new or rare. Reports of such examinations are submitted to the sender, and his coöperation is solicited in working out the cases. Accurate records of such work are kept on file in the laboratory and are available to members of the Veterinary Division at all times for their study and use. Thus the work of the department supports the instruction work and assists in keeping such instruction modern.

VETERINARY MEDICAL SOCIETY

The Veterinary Medical Society is an organization of veterinary students. Two meetings are held each month and topics relating to veterinary medicine are discussed. All veterinary students become members and much benefit is derived along literary, social and professional lines.

ANIMAL HUSBANDRY

PROFESSOR KILDEE, Agricultural Hall, Room 103

121. **Market and Breed Types of Beef and Dual-Purpose Cattle.** (Veterinary students.) Judging. Fall. Rec. 1; labs. 2, 2 hr.; credit 2⅓; fee $1.00.

122. **Market and Breed Types of Sheep and Horses.** (Veterinary students.) Similar to 121. Winter. Rec. 1; labs. 2, 2 hr.; credit 2⅓; fee $1.00.

123. **Market and Breed Types of Dairy Cattle and Hogs.**. Similar to 121. Spring. Rec. 1; labs. 2, 2 hr.; credit 2⅓; fee $1.00.

241. **Animal Feeding.** (Veterinary students.) Composition and digestibility of feeding stuffs: preparation; feeding standards and calculation of rations. Spring. Lect. 3; credit 3.

251. **Principles of Breeding.** Physical basis of heredity; Mendelism; live stock breeding. Prerequisites 111, 112, 113, or 121, 122, 123. Winter. Lect. 3; credit 3.

BOTANY

PROFESSOR PAMMEL, Central Building, Room 314

140. **Structural Botany.** (Veterinary students.) Fall. Rec. 2; labs. 2, 2 hr.; credit 3⅓; fee $3.00.

460. **Poisonous Plants.** History of toxicology, poisoning by ptomaines, toxins and other agents, including thallophytes and higher plants in systematic order.

A. **Elementary Principles.** (Veterinary or Science students.) Plants responsible for poisoning animals. Prerequisite 140. Fall. Rec. 2; lab. 1, 3 hr.; credit 3; fee $3.00.

CHEMISTRY

PROFESSOR COOVER, Chemistry Building, Room 202

511. **General Chemistry.** (Veterinary students.) Principles and the more important elements, including the preparation of some of their compounds. Fall. Rec. 3; labs. 2, 3 hr.; credit 5; deposit $7.50.

821. **Applied Organic Chemistry.** (Veterinary students.) Attention given to organic compounds of biological importance. Prerequisite 511. Winter. Lect. 2; rec. 1; labs. 2, 3 hr.; credit 5; deposit $9.00.

822. **Physiological Chemistry.** (Veterinary students.) Chemistry of the animal body; digestion; metabolism; nutrition. Prerequisite 821. Spring. Lect. 2; rec. 1; labs. 2, 3 hr.; credit 5; deposit $9.00.

DAIRYING

PROFESSOR MORTENSEN, Dairy Building, Room 9

66. **Milk Inspection.** Testing of milk and cream by the Babcock methods. Inspection of milk and milk products. Fall. Rec. 1; lab. 1, 3 hr.; credit 2; fee $1.50.

A Research Laboratory

ECONOMIC SCIENCE

Applied Economics and Social Science

Professor Brindley, Central Building, Room 223

230. **Business Law.** Law of contracts, sales, bailments, guaranty, insurance, negotiable instruments, partnerships and corporations, real and personal property. Separate sections provided for (A) engineers, (B) home economics, and (C) veterinary medicine. Any quarter. Rec. 3; credit 3.

ENGLISH

Professor Noble, Central Building, Room 18

301a, 301b. **Composition.** (301a) Fundamental principles. Daily themes; ease and correctness in sentence and paragraph. (301b) Written and oral composition, including business letters. Winter and Spring, respectively. Rec. 2; credit 2.

LIBRARY

Acting Librarian Miss Dixon, Central Building, Room 111

Veterinary Library, Veterinary Building. This book collection includes works on zoology, bacteriology, medicine, veterinary surgery, veterinary anatomy, veterinary physiology, and veterinary pahtology. About one-fourth of the current periodicals are French and German.

MILITARY SCIENCE AND TACTICS

John K. Boles, Capt. F. A., U. S. A.
John H. Jones, Capt. Engineers, U. S. A.
Ralph Slate, 1st Lt. Infantry, U. S. A.
James Rush Lincoln, Professor Military Science

21a, 21b, 21c. School of soldier, squad, company, discipline, military courtesy, rifle practice, signaling, guard duty, service of security, combat principles. Fall, Winter, Spring. Lect. 1; drills 2; credit 1.

22a, 22b, 22c. Schools of company and battalion, court martials, mock trials, military law and history, organization and equipment. Fall, Winter, Spring. Lect. 1; drills 2; credit 1.

PHYSICAL TRAINING

Professor Mayser, Gymnasium, Room 202

10a, 10b, 10c. **Physical Training.** Personal Hygiene. Floor Tactics. Calisthenics. Gymnastics. Swimming. Outdoor and Indoor Games and Athletics. Efficiency Lectures. First Aid. Fall, Winter, and Spring respectively. Labs. 2, 1 hr.; required; fee $1.00 each quarter.

11a, 11b, 11c. **Physical Training.** Advanced Work. Prerequisite 10c. Fall, Winter, and Spring respectively. Lab.1, 1 hr.; required; fee $1.00 each quarter.

PUBLIC SPEAKING

Professor Shattuck, Central Building, Room 311½

30. **Extempore Speech.** The fundamental principles of speech organization and delivery. Fall, Winter, or Spring. Rec. 2 or 3; credit 2 or 3.

ZOOLOGY AND ENTOMOLOGY

PROFESSOR BALL, Science Building, Room 313

1a, 1b, 1c. **General Zoology.** A general survey of the animal kingdom together with a discussion of the more important biological laws.

For students in Veterinary Medicine. Emphasis laid on the principles of development. (1a) Fall. Rec. 2; lab. 1, 3 hr.; credit 3; fee $2.00. (1b) Winter. Rec. 2; lab. 1, 3 hr.; credit 3; fee $2.00.

202. **Embryology.** (Veterinary students.) Vertebrate development, mainly bird and mammal. Like 201 but with emphasis on histogenesis, mammalian development and fetal membranes. Prerequisite, General Zoology. Spring. Lect. 2; lab. 1, 3 hr.; credit 3; fee $2.50.

A Corner in the Veterinary Library

General Information

ADMINISTRATION

The laws of the United States and State of Iowa provide for the scope and the management of the State College of Agriculture and Mechanic Arts. It is under the State Board of Education, which consists of nine men nominated by the Governor and confirmed by the Senate. This Board appoints a finance committee consisting of three men who give their entire time to the management of the four state educational institutions of Iowa, of which the Board is in charge, under provision of the law and such rules and regulations as the State Board of Education may prescribe.

GOVERNMENT

The character of the College buildings and the nature of the work make order, punctuality, and systematic effort indispensable. The institution offers no inducement to the idler or the self-indulgent. All who are too independent to submit to needful authority, too reckless to accept wholesome restraint, or too careless to take advantage of their opportunities, are advised not to come. The discipline of the College is confined mainly to sending away those who prove, on fair trial, to be of this class. The final decision of all cases of discipline rests with the President of the College except when he delegates such power in particular cases to the deans or to some one of the standing committees of the faculty. A student senate has been organized to make recommendations to the President.

HISTORY

An act establishing "A State Agricultural College and Model Farm" to be connected with the entire agricultural interests of the state was passed by the legislature of Iowa in 1858. This legislature also appointed a board of commissioners to buy a farm and erect a college building, and selected a board of trustees to secure a faculty and organize a college. In 1859 a farm of six hundred and forty acres situated near Ames was purchased.

In 1862 Congress enacted, and President Lincoln signed, a bill entitled, "An act donating public lands to the several States and Territories, which may provide colleges for the benefit of Agriculture and the Mechanic Arts."

Section 1 of this act provides that for the support of such colleges there be granted "an amount of public land, to be apportioned to each State in quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of 1860."

Section 4 requires: "That all moneys derived from the sale of land shall constitute a perpetual fund, the capital of which shall remain forever undiminished, and the interest of which shall inviolably be apportioned by each State which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related

to agriculture and the mechanic arts, in such manner as the Legislature of the State may provide, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The General Assembly of Iowa, September 11, 1862, accepted the grant upon the conditions and under the restrictions contained in the act of Congress, and by so doing entered into contract with the General Government to erect and keep in repair all buildings necessary for the use of the College. By action of the General Assembly the College was changed from an agricultural institution into a College of Agriculture and Mechanic Arts with the broad and liberal course of study outlined in the following paragraph. The College was formally opened on the seventeenth day of March, 1869.

In 1884 the General Assembly passed an act defining the course of study to be pursued as follows: "Section 1. That Section 1621 of the Code is hereby repealed and the following is enacted in lieu thereof: 'Section 1621. There shall be adopted and taught in the State Agricultural College, a broad, liberal and practical course of study, in which the leading branches of learning shall relate to agriculture and the mechanic arts and which shall also embrace such other branches of learning as will most practically and liberally educate the agricultural and industrial classes in the several pursuits and professions of life, including military tactics. Section 2. That all acts and parts of acts inconsistent with this act are hereby repealed.'"

August thirtieth the following act was approved by President Harrison: "Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, that there shall be and hereby is, annually appropriated, out of any moneys in the treasury not otherwise appropriated, arising from the sales of public lands, to be paid, as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may hereafter be established, in accordance with an act of Congress approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language and the various branches of mathematical, physical, natural and economic sciences, with especial reference to their application in the industries of life, and to facilities for such instruction."

The income of the College from national and state sources is therefore expended in instruction, experimentation, and illustration in agriculture and in the mechanic arts, and in the underlying and related sciences and literature. All buildings are erected and all repairs thereon are made by the State of Iowa.

The college property is valued at $4,546,918.86.

LOCATION

The College occupies a delightful and healthful location upon high, rolling land in the west part of Ames, Story County. Situated at the junction of the north and south branch and the main double-track line of the Chicago & Northwestern Railroad, and connected with all the trunk lines of Iowa, Ames is easily accessible from all parts of the state. An electric railway connects Ames and the College. The Fort Dodge, Des Moines and Southern Railway (electric), with stations on the campus,

gives efficient service at the College and connections with the following trunk lines: At Fort Dodge, with the Illinois Central and Chicago Great Western; at Huxley, with the Chicago, Milwaukee & St. Paul; at Des Moines with the Chicago, Rock Island & Pacific, the Chicago Great Western, and the Chicago, Burlington & Quincy.

Ames is a most desirable town for wholesome college influences. Its people are thrifty, enterprising, and cordial. The town has an excellent system of public schools, numerous churches, waterworks, and electric lights, and it also has a good city government. It is an inviting community for families who wish to educate their children and enjoy a good environment at a reasonable expense. Ames and the College are on very cordial terms, and its citizens seek to promote the efforts of the students and the highest interests of the College.

GROUNDS

Of the entire College domain of 1,355 acres, 125 acres are set apart for College grounds. These include the experimental plots, the young forestry plantations, the surroundings of professors' dwellings, and the central campus with its beautiful walks and drives, its trees, shrubbery, and flower gardens, and its large and stately buildings. The true principles of landscape gardening have been so faithfully observed in the gardening and in the location of buildings and drives as to make the entire campus a large and beautiful park.

BUILDINGS

Fifty-five commodious buildings besides the dwellings houses and the buildings for farm stock, machinery, and work, have been erected by the State for the exclusive use of the various departments of the College. All of these buildings are heated by steam, lighted by electricity, and supplied with pure water.

The map in the front of this catalog gives a list of the buildings and their location on the campus.

The following is a summary of the property, including the buildings belonging to the College:

Inventory for July 1, 1918

Real Estate	$ 261,841.50
Buildings	2,844,922.50
General Equipment	307,635.15
Equipment:	
College Departments	679,983.48
Two-year Departments	9,858.37
Experiment Stations	53,269.87
Furniture:	
College Departments	232,161.27
Two-year Departments	6,598.49
Experiment Stations	6,305.41
Supplies:	
College Departments	117,702.21
Two-year Departments	2,386.51
Experiment Stations	24,254.10
	$4,546,918.86

EMPLOYMENT FOR STUDENTS

Although this institution is not situated in a large center where there is an unlimited amount of employment for students, yet there are a large

number who can earn a part of their expenses here at College. Very few are able to make all their expenses, and no young man should come expecting to do this unless he has made definite arrangements previous to his coming.

The work available for students consists of employment in the various departments, such as office work, caring for stock, helping in dairy, green houses, orchards, shops, or janitor work about the buildings. Considerable work for students is also obtained in the business houses and homes of Ames; a limited number find employment in student clubs and in the cafeteria.

The Employment Bureaus are managed as follows: For men, by the Young Men's Christian Association. Regular work for women, Miss Harwood, Adviser to women; odd hour jobs for women, the Young Women's Christian Association. The heads of various departments are able to secure employment for large numbers of students during the summer vacation. Such positions give the students practical work that is closely related to the instruction given in college, and thereby strengthen them for service after graduation.

During the present year several hundred students have found work through the Association Employment Bureaus. It is suggested that, on account of the heavy laboratory work required in the courses here, students should not come expecting to put in too much time in labor. Facts regarding opportunity for work at the College can be had by writing Secretary, Y. M. C. A., or Secretary, Y. W. C. A., or Miss Hazel Harwood.

Manual Labor

The following regulations in regard to manual labor have been adopted by the Board of Education:

1. The manual labor of students is divided into two kinds: uninstructive labor, which shall be paid for in money; and instructive labor, which shall be compensated by the instruction given and the skill acquired.

2. Uninstructive labor shall comprise all the operations in the workshop, the garden, upon the farm, and elsewhere, in which the work done accrues to the benefit of the College, and not to that of the student. Instructive labor shall embrace all those operations in the workshop, museum, laboratories, veterinary hospital, experimental kitchen, gardens, experimental stations, and on the farm,—labor in which the sole purpose is the acquisition of knowledge and skill.

3. Students shall engage in instructive labor in the presence of the professor in charge, and under his instruction according to the statement made in each of the courses of study.

The compensated labor furnished by the divisions of Agriculture, of Veterinary Medicine, and of Engineering, is given by each to its own students and is eagerly sought. Compensated labor is awarded to the most faithful and meritorious students in each department. This labor is paid for according to its value to the College, but no student should expect to pay the main part of his expenses by labor while here. The College cannot furnish the work, and, even if it could, the student's time is *needed chiefly for study*. Still, many worthy and industrious students pay a considerable part of their expenses by labor; over $25,000 is paid out by the College thus each year to students and graduate assistants.

HOSPITAL

Sanitary conditions surrounding the College are excellent. The buildings are situated on high ground with good natural drainage. The water supply is exceptionally pure and abundant. The sewer system and sewage disposal plant are the best that modern sanitary engineering can devise.

Nevertheless in this, as in other like institutions, where students are drawn from a wide territory, various diseases are brought by the students themselves. In order to control epidemics and properly to care for other cases of illness or injury, a hospital is provided. A new hospital of 45 beds capacity with a large dispensatory and all modern conveniences has been constructed. In connection with this is the old hospital of 18 beds for special cases. This hospital is under the charge of the College physician, assisted by four registered nurses, a competent housekeeper and helper, and two student hospital assistants.

The expenses of the hospital are defrayed from a fund accruing from the fees paid by students. The privileges of the hospital are extended to all students who pay the full incidental fee of $6.00 or more per quarter, provided that the physician shall be paid for calls at their residences. Persons not making the deposit will be admitted to the hospital upon the basis of a charge of $21.00 a week, within the discretion of the College physician. All students who pay the full regular fees are insured medical attendance, nursing, and medicine, in illness or accident; and consultation and medicine for minor ailments in accordance with the regulations herein published. The charges named are based upon the probable actual cost of medical attention and hospital service, and the fund created is carefully devoted to these purposes. The College cannot assume any liability beyond the extent of the fund so created. The hospital has proved to be a great blessing to the students.

The following regulations apply to the privileges of the hospital:

1. Students entering the hospital shall be charged $8.50 a week ($1.25 per day) for board, room, light and heat. But for any time in excess of three consecutive weeks spent in the hospital, a charge shall be made of $1.50 per day.

2. In case a special nurse or physician is employed, the expense shall be borne by the particular patient, the selection of such nurse or physician to be approved by the President of the College and the College Physician.

3. The College assumes no responsibility whatever in case of smallpox; nor shall the privileges of the hospital be extended to such cases.

4. The President and the College physician may require of students entering the College a certificate of a reputable physician showing successful vaccination. On account of prevalence of small-pox in some localities in the United States, it is strongly urged that all students entering Iowa State College be vaccinated before leaving home. This is recommended in order that valuable time may not be lost during the college year by the necessity of being vaccinated.

5. The College physician is authorized to exclude from the College dormitories and recitation rooms any person afflicted with a contagious disease.

ALUMNI ASSOCIATION

The Alumni Association of the Iowa State College was organized in 1876. Its purpose is to promote the highest interest of the institution and to increase friendship and sympathy among students and alumni.

The present officers of the association are:

Honorary President, E. W. Stanton, '72, Ames, Iowa.
President, Roy F. O'Donnell, '08, Mason City, Iowa.
Vice-President, Claire Currie, '05, Webster City, Iowa.
Recording Secretary, Mary (Davidson) Budge, '05, Ames, Iowa.
Treasurer, Herman Knapp, '83, Ames, Iowa.
General Secretary, Ward M. Jones, '97, Ames, Iowa.

The annual meeting and banquet is held commencement week. A local

association was organized at Ames in April, 1903, in order to arrange the annual meetings and to keep the local alumni in touch with one another.

Active local branches of the general association exist in Southern and Northern California, Washington, D. C., Pittsburgh, Chicago, St. Louis, Seattle, Minneapolis and St. Paul, Omaha, New York City, Kansas City, Detroit, Spokane, and Oklahoma City; in the state, at Des Moines, Sioux City, Davenport, Waterloo, and in several counties.

The Alumnus, the official organ of the association, appears monthly except in August and September. It is under the supervision of the general secretary.

The offices of the association are on the second floor of Alumni Hall, where all alumni and ex-students will find a hearty welcome.

STUDENT PUBLICATIONS

The I. S. C. Student is a tri-weekly newspaper published by a staff appointed from the student body and devoted to the news of the College.

The Bomb is an annual published by the Junior class.

The Iowa Agriculturist is an agricultural monthly magazine published by the students of the Agricultural Division, in coöperation with the Department of Agricultural Journalism.

The Iowa Engineer is published monthly by the Engineering Society.

PUBLIC SPEAKING COUNCIL

The Public Speaking Council is an organization composed of three faculty members recommended by the President of the College and appointed by the Board of Education; and one representative from each of the ten literary societies, the Sophomore, the Junior, and the Senior classes, and the Dramatic Club. The Council promotes and manages all dramatic and public speaking activities at Iowa State College. These activities include intersociety and intercollegiate debates, dramatic, oratorical, and extempore speaking contests, joint literary society programs, literary society graduation exercises, and all class plays.

Teams of three members from each of the societies meet in two series of debates during the fall quarter. In the spring the successive winners meet in the semifinal and final debates for the Kennedy cup. The final winners are awarded the cup for one year, and the name of their society is inscribed upon it. This series of debates offers excellent training for the intercollegiate debates. Iowa State College is a member of two debating leagues. In the fall two debating teams of three students meet Kansas Agricultural College; in the spring, Purdue University and Michigan Agricultural College.

There is a growing interest in extemporaneous speaking in Iowa State College. The members of the faculty have donated to the Council a trophy to be awarded annually to the winner of the extempore speaking contest.

The Sophomore, Junior, Senior, inter-literary socitey, and dramatic club plays offer training in dramatics to a great many students. The funds from these plays pay a large part of the expenses of public speaking events.

LITERARY SOCIETIES

The work of the ten literary societies serves not only to supplement the social and literary work of the College, but also to aid the student in securing that training so necessary to enable him to appear before an audience, that training which every student needs and which cannot be secured in the class room alone. Every student is invited, even urged, to join one of these societies.

MUSICAL ORGANIZATIONS

The following musical organizations are maintained by the College: a men's Glee Club, a girls' Glee Club, College Orchestra, College Military Band, College Concert Band, and Festival Chorus. All of these societies give conecerts during the year, and the Glee Clubs go on concert tours. The Advanced Choir gives special music at the chapel service on Sundays.

Eminent artists and musical organizations are brought to the College each year. Among those who have recently appeared are the Minneapolis Symphony Orchestra, the United States Marine Band, Maud Powell, Julia Culp, the New York Symphony Orchestra, David Bispham, Evan Williams, Louise Homer, Mischa Elman, Anna Case, Josef Hoffman, Mme. Schumann-Heink, Mme. Gadski, May Peterson, Casals, the Kneisel String Quartet, the Zoellner String Quartet, John McCormack, Rudolph Ganz, and Frances Alda.

LIBRARY REGULATIONS

The general library is primarily for free reference use; any student or citizen of the state may use the books in the reading rooms. The privilege of drawing books for use outside the building is accorded to all members of the instruction force, to all registered students, and to other accredited persons. Books in the general library not reserved for classes may be borrowed for home use for two weeks and may be renewed for two weeks more if not specially restricted or called for. All books are subject to recall any time when needed for college work.

General reference books, all general periodicals and certain other groups of books are to be consulted in the reading rooms only.

Books from the stacks which are not returned on time are subject to a fine of 10c a day after notice has been sent that the book is due. Books from the Reserve shelves are subject to a fine of 50c for the first hour and 50c for each additional hour if kept overtime.

Books recalled for college work must be returned at once upon receipt of the notice. If not returned within two days after the notice is mailed a fine of 25c a day is charged. All books lost or damaged must be paid for. Books not at the time needed at the College, or not subject to special restrictions, may be loaned for a limited period to other libraries in the state, or to alumni of the College.

Hours for Opening. The general library is open week days during the general sessions of the College from 7:50 a. m. to 9:30 p. m., and on Sundays from 2 p. m. to 5 p. m. During the Summer Session the library is open from 8 a. m. to 6 p. m., and 7 to 9 p. m., but is not open on Sundays. During the summer vacation the library is open from 9-12 a. m and from 1-4 p. m.

Permits may be given to members of the faculty for use at other times. The library is regularly closed on New Years, Independence, Thanksgiving, and Christmas days. The hours of opening of the department libraries differ somewhat from those given above.

RELIGIOUS LIFE AT THE COLLEGE

Orange Howard Cessna, Chaplain
Fred C. Hansen, General Secretary, Y. M. C. A.
Fina C. Ott, General Secretary, Y. W. C. A.

The college life is permeated with religious influences. The following are among the more evident moral and religious forces in operation throughout the year:

1. **The Sunday Morning Chapel Services** are held in Agricultural Hall auditorium and are addressed by prominent clergymen of all deno-

minations who accept special invitiations to come to the College for this purpose. These services are well attended. Often the hall is filled to its capacity of nearly 900. An attractive feature is the music furnished by a choir of College students.

2. **The Y. M. C. A. and the Y. W. C. A.** are quartered in Alumni Hall on the campus and have regular secretaries. Last year over 85% of the young women students belonged to their association. The associations conduct Bible classes in sororities, fraternities, and boarding houses, These classes are well attended. Special religious services are held under the direction of prominent Association leaders.

There are in active operation a Catholic Students' Association, a Luther League, Brotherhood of St. Andrew, Epworth League, Baptist Young People's Union, and Christian Endeavor Societies.

3. **College Pastors.** Four churches now maintain college pastors at Ames, the Methodist, the Presbyterian, the Congregational, and Episcopal. These men work in conjunction with their churches and with the religious organizations on the campus. They are exerting a helpful influence.

4. There are ten different **denominational churches** in Ames, all of which are in touch with the students, who are cordially invited to take part in all religious services.

LECTURES AND ADDRESSES

The following speakers addressed the students of the College during the calendar year 1919:

January 20-24—Dr. H. H. Powers, Traveller and Publicist. A series of addresses on "Problems of the Peace Table."

January 20—"Expiation: Possibilities of Punishment and Reparation."

January 21—"Natural Resources: The Economic Requisites of Nationhood."

January 22—"The New Nations: Self-Determination and Self-Maintenance."

January 24, 4:15 P. M.—"The New Wards: World Trusts and World Trustees."

January 24, 8:15 P. M.—"The New Guaranties: Balance of Power and Superstate."

February 9—Hon. J. B. Weaver, Des Moines, Roosevelt Memorial Address.

February 10—President R. A. Pearson, "Some Glimpses of My Trip to Europe." Illustrated.

February 13—Chas. A. Payne, "America, the Allies, and the New World." Illustrated.

February 18—Madame Harriet Labadie, Reading, "The Tragedy of Nana." By John Masefield.

February 27—Charles Zueblin, Publicist, Boston, "Federalism and World Organization."

March 6—Edgar J. Banks, Explorer and Author, "A Thousand Miles Down the Tigris River." Illustrated.

March 13—Charles Upson Clark, American Academy in Rome, "How Italy Protects Her Works of Art in War Time."

March 17—Rev. J. C. Orth, "Loyalty Among German-Americans."

April 10—Chief Red Fox, "Patriotism and Philosophy of the American Indian."

April 10—Lieutenant Robert Renard of the French Commission, "The Problem of Reconstruction in France."

April 15—Lee M. White, Editorial Secretary of the Detroit News, "A Modern Newspaper." Illustrated with Motion Pictures.

April 18, 4:15 P. M.—Prof. S. H. Clark, University of Chicago, "Intimate Glimpses of Our Boys in France and Italy."

April 18, 8:15 P. M.—Prof. S. H. Clark, University of Chicago, Reading of John Galsworthy's "Strife."

June 2—Dr. W. O. Thompson, President Ohio State University, "The United States and the League of Nations." Convocation Address.

June 18—General W. M. Black, Chief of Engineers of U. S. A., Commencement Address.

June 20—Rev. Howland Hanson, Des Moines, Baccalaureate Address.

October 10—Bishop Homer C. Stuntz, Convocation Address, "The World's Need for Christian Leadership."

October 16—Rev. E. W. Cross, Grinnell, Iowa, "The American Crusade."

October 24—Governor W. L. Harding, Convocation Address, "Iowa."

November 6—Howard J. Clark, Attorney, Des Moines, "The Proposed League of Nations: An Analysis."

November 11—Hon. Nate Kendall, Albia, Convocation Address, "Armistice Day."

November 13—Dr. W. E. Macklin, Medical Missionary in China, "Present Conditions in China."

November 14—Mark Sullivan, former editor of Collier's Weekly, "An Inside View of the Peace Conference."

December 12—James Norman Hall, Leading Iowa Ace, "The Azure Lists." 4:15 P. M. and also 8:15 P. M.

Report of Cases Treated in Hospital Clinic Division of Veterinary Medicine Iowa State College

From January 1, 1919, to January 1, 1920

INTERNAL DISEASES OF DOMESTICATED ANIMALS

	Horses & Mules	Cattle	Swine	Sheep	Dogs	Cats	Fowls	Rabbits
A. Infectious Diseases								
Influenza	1							
Purpura Hemorrhagica	1							
Cholera							1	
Coccidiosis							3	1
Navel Ill	2							
Infection Keratitis		15						
Distemper					3			
Actinomycosis		4	2					
B. Diseases of Respiratory Organs								
Pneumonia	1	2	10	4				
Emphysema	6							
C. Diseases of Digestive Organs								
Ascariasis			4					
Acute Indigestion	6	2						
Constipation					1	1		
Intestinal Catarrh	5	1	1		1			
Gastric Catarrh	1							
Pharyngitis	2		1					
Impaction	1	1						
Sclerostomiasis	15							
Nodular Disease			1					
Stomatitis					1			
Oesophageal Choke	1				1			
D. Diseases of Nervous System								
Facial Paralysis	4							
Pharyngeal Paralysis	1							
Hydrocephalus				1				
Cribbing	1							
E. Diseases of Skin								
Mange						1		
Dermatitis		1						
Eczema					3			
Phthiriasis	6							
F. Diseases of Circulatory Organs								
Endocarditis			1					
Septicemia	1							

A Corner of the Anatomy Specimen Room

G. Diseases of the Eye								
Cataract	1							
Conjunctivitis	1							
Keratitis	4							
Entropion	1			1				
Periodic Ophthalmia	6							
H. Diseases of Organs of Locomotion								
Rheumatism				1				
Myositis	1							
I. Miscellaneous								
Tetanus	2							
Toxemia				1				
Azoturia	1							
Necrobacillosis			1					
Foot Rot		12						
J. Tests and Vaccinations								
Health Certificates	11		7	1				
Tuberculin Tests		52						
Mallein Tests	13							
Johnes Disease Tests		2						
Vaccination against Hemorrhagic Septicemia		101		93				
Hog Cholera			170					
Soundness Examinations	3							
K. Autopsies								
Hog Cholera			23					
Pneumonia		3	9	2				
Infectious Rhinitis			3					
Hemorrhagic Septicemia		9	3	10			1	
Ascariasis			2					
Enteritis		1	11				1	
Sarcoptic Mange						1		
Peritonitis	1		3					
Tetanus	1							
Verminous Pneumonia			2					
Equine Strongylosis	4							
Septicemia (non-specific)	3	1	7					
Mastitis				1				
Coccidiosis							5	
Blackleg	1							
Trauma						1		
Malnutrition		1						
Navel Infection				1				
Leukemia			1					
Hydrocephalus				1				
Aortic Rupture	1							
Pharyngitis				1				
Hepatic Rupture			1					
Decomposition		1	1					
Senility					1			
Johnes Disease		2						
Mastitis				1				
Intestinal Impaction	1							
Mastoiditis			1					
Asphyxia			1					
Totals—	111	211	266	119	11	4	11	1

SURGICAL DISEASES OF DOMESTICATED ANIMALS

A. Lips and Cheeks							
Abscess	1						
Wounds	2		2				
B. Mouth							
Alveolar Periostitis	20						
Enamel Points	104						
Extraction	20						
Odontoma	1						
Retention Cysts	1						
Supernumerary Molar	1						
C. Nostrils and Sinuses							
Abscess—Septum	1						
Empyema	2						
Thickened Septum	1						
D. Face and Mandible							
Abscess	2	1			1		
Wounds	2	2					
E. Ear and Guttural Region							
Cropping					1		
Wounds	2						
F. Eye and Lids							
Entropion				2			
Prolapse of nictitans		1					
Tumors—Sarcoma	1	1					1
Wounds	1						
G. Poll							
Fistula	12						
Dehorning		3					
H. Neck							
Collar galls	4						
I. Larynx and Trachea							
Roaring	1						
J. Thorax and Withers							
Fistula	18						
K. Abdomen—Tail							
Abscess	2	1	3				
Atresia ani			1				
Amputation of tail	8				1		
Fibroma			1				
Hernia—umbilical			13				
Hernia—scrotal	1		43				
Hernia—ventral	2		5				
Prolapse—intestinal			2				
Wounds			1		2	1	
Rumenotomy		1					
L. Genito—Urinary							
Abortion		1	1				
Castration	41	12	63		4	1	
Cesarean section			3			1	
Cryptorchidy	3		9				
Dystokia			4				
Edema of sheath	1						
Hydrocele	2						
Mastitis	3	2		1			
Metritis	6	28	1	1			
Oophorectomy					34	1	
Orchitis			2				

Paraphymosis	2							
Paralysis of bladder	1							
Persistent hymen	1							
Posthitis	1							
Pyometra	2							
Retained placenta	1	6						
Scirrhous cord			16					
Scrotal abscess								
Tumors—vagina		1						
Vaginitis	1	1						
M. Fore Leg								
Shoulder and Arm								
Abscess	1							
Collar galls	1							
Collar tumors	1							
Hematomas								
Paralysis suprascapular	9							
Phlegmon	1							
Seroma	8							
Elbow and Forearm								
Fibroma	6							
Shoe boil	1							
Knee and Metacarpus								
Fibro sarcoma	1							
Hematoma	1							
Papilloma	1							
Tendovaginitis	3							
Tendon-contraction	1							
Phalanges								
Crack-quarters	1							
Laminitis	1							
Navicular disease	1							
Pododermatitis	15							
Quittor	2							
Ringbone	11							
Sidebone lameness	1							
Thrush	1							
Traumatism			1		1			
Trimming hoofs	10						1	
Wirecuts	18							
Fracture, 1st phalanx	1							
N. Hind Limb								
Quarters and Stifle								
Hematoma					1			
Dislocation								
Femur		1						
Patella	1							
Fracture—Pelvis	1							
Tibia					1			
Foreign body—gluteal	1							
Hematoma	1							
Gonitis	2							
Leg and Hock								
Arthritis—suppurative		1						
Hematoma	1							
Lymphangitis	2							
Phlegmon	1							
Spavin	5							
Wounds	5			1				

Metatarsus								
Tumors—papilloma	2							
Wire cuts	2							
Total Surgical Diseases	396	63	171	5	46	5	1	
Total Internal Diseases	111	211	266	119	11	4	11	1

Total number of conditions treated.....1421
Total number of cases treated.....1342
Number of animals treated twice..... 79

Report of Cases Visited by Ambulatory Clinic Division of Veterinary Medicine Iowa State College

From January 1, 1919, to January 1, 1920

MEDICAL

A. Infectious Diseases.

Actinomycosis	3
Lymphangitis	2
General septicemia	2
Tuberculosis	11
Infectious pneumonia	745
Black leg	2
Hemorrhagic septicemia	325
Purpura hemorrhagica	10
Tetanus	5
Influenza	13
Malignant edema	7
Hog cholera	287
Infectious enteritis	973
Peritonitis	1
	2386

B. Diseases of Respiratory System.

Empyemia facial sinuses	1
Rhinitis	1
Catarrhal pneumonia	7
Congestion of lungs	4
Traumatic pneumonia	1
Croupous pneumonia	2
Laryngitis	3
	19

C. Diseases of Digestive System.

Acute intestinal catarrh	8
Chronic intestinal catarrh	6
Traumatic indigestion	3
Sclerostomiasis	63
Strongylosis	250
Volvulus	2
Gastric tympany	20
Intestinal tympany	12
Acute bloating of rumen	4
Impaction, gastric	5
Impaction of rumen	47
Impaction, intestinal	16
Atony of rumen	2
	438

D. Diseases of Nervous System.

Parturient paraplegia	1
Sciatic paralysis	3
Parturient paresis	12
	16

E. Diseases of Circulatory System.

Pericarditis	3

F. Diseases of Uro-Genital System.

Examination for pregnancy	25
Orchitis	2
Mammitis	3
Metritis	45
Cystitis	3
	92

G. Disease of Skin.

Psoriasis	2

H. Miscellaneous Diseases.

Azoturia	28
Heat stroke	3
Sun stroke	1
	32

I. Diagnostic Tests and Protective Vaccination.

Health Certificates	96
Mallein tests	22
Tuberculin tests	81
Vaccination against blackleg	44
Vaccination against hemorrhagic septicemia	1146
Vaccination against hog cholera	3522
	4911

J. Autopsies.

General septicemia	2
Malignant oedema	7
Black leg	2
Hemorrhagic septicemia	26
Horse, rupture stomach	2
Swine, hog cholera	18
Swine, tuberculosis	2
Swine, infectious enteritis	17
Volvulus	4
Sclerostomiasis	7
	87

SURGICAL

A. Mouth.

Split molar	2
Long molar	2
Enamel points	27
Stomatitis	
	31

B. Face and Mandible.

Odontinoid cyst	1

C. Diseases of the Eye

Keratitis	7

D. Poll.

Wound	1
Hemorrhage following dehorning	1
	2

E. Neck and Thorax.

Choke	1
Seroma	2
Abscess	4
Sore neck	4
	11

F. Abdomen.

Tumor	1
Hernia—ventral	4
Hernia—inguinal	7
Prolapse uterus	1
Prolapse vagina	2
Rumenotomy	3
Wound	2
	20

G. Genito-Urinary Organs.

Schirrhus cord	9
Castration—calf	23
Castration—colts	28
Castration—pigs	40
Castration—sheep	3
Dystokia	15
Sterility	15
Pervious urachus	3
(Omphalitis) infection—umbilical	14
(Omphalo-phlebitis) general infection from umbilicus	5
Retained placenta	55
Post partem hemorrhage	2
Cesarean section	5
Prolapse uterus	1
Retention cyst	1
	248

H. Fore Limb.

Abscess, prescapular	2
Fistula, withers	2
Seroma, shoulder	4
Wounds	8
Fracture, radius	1
Fracture, first phalanx	2
Calk wounds	3
Navicular disease	1
Sweeney	2
Laminitis—acute	5
Radial paralysis	2
Pododermatitis—suppurative	8
Open joint	2
Tendo vaginitis	4
Wire cuts	3
Side bone	1
Hygroma	1
	51

I. Hind Limb.

Phlegmon	1
Gonitis—chronic	3
Wounds	10
Spavin	2
Fracture of femur	1
Open joint (hock)	1
Wire cut	3
Pododermitis—suppurative	6
Kick wound	8
Polyarthritis	1
	36

Number of Medical Cases	7986
Number of Surgical Cases	407
Total number of conditions treated by Ambulatory Clinic	8393

The above conditions were found among the various species of animals as follows:

Horses	320
Mules	16
Cattle	990
Swine	5613
Sheep	1308
Dogs	6
Total number of animals	8253

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VETERINARY MEDICINE

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Extension courses are conducted at various points throughout the state.

Research work is conducted in the Agriculture and Engineering Experiment Stations and in the Veterinary Research Laboratory.

Special announcements of the different branches of the work are supplied, free of charge, on application.

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IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS OFFICIAL PUBLICATION

DIVISION OF VETERINARY MEDICINE 1921-1922

VOL. XIX, NO. 35, JANUARY 26, 1921
AMES, IOWA

Published weekly by the Iowa State College of Agriculture and Mechanic Arts, Ames Iowa. Entered as second-class matter and accepted for mailing at special rate of postage provided for in Section 429, P. L. & R, Act, August 24, 1912, Authorized April 12, 1920.

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Stange, Charles Henry, Dean of the Division of Veterinary Medicine, Professor of Veterinary Medicine, 1909, 1907.
D. V. M., Iowa State College, 1907.

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D. V. M., Iowa State College, 1908.

Murphey, Howard Sylvester, Professor of Veterinary Anatomy and Histology, 1913, 1909.
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Ph. B., Drake University, 1906; B. S., Iowa State College, 1910; D. V. M., 1912.

Benbrook, Edward Antony, Professor of Veterinary Pathology, 1919, 1918.
V. M. D., University of Pennsylvania, 1914.

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B. S., Georgetown College, 1902; D. V. M., Iowa State College, 1913.

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D. V. M., Ohio State University, 1911.

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Aitken, William Alexander, Veterinary Anatomy, 1920, 1919.
D. V. M., Iowa State College, 1917.

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B. L., University of Wisconsin, 1902; A. M., 1906; Ph. D., University of Iowa, 1911.

Guthrie, Joseph Edward, Professor of Zoology, 1917, 1901.
B. S., University of Minnesota, 1900; M. S., 1901.

Lincoln, James Rush, Professor of Military Science, 1884, 1883.
Brigadier General, U. S. Vol., 1898-1899; Major, U. S. A., 1918.

Mayser, Charles William, Professor of Physical Training, 1919, 1915.

Mortensen, Martin, Professor of Dairying, 1909.
B. S. A., Iowa State College, 1909.

Noble, Alvin Buell, Professor of English, 1898.
B. Ph., State University of Iowa, 1887.

Pammel, Louis Hermann, Professor of Botany, 1889.
B. Agr., University of Wisconsin, 1885; M. S., 1889; Ph. D., Washington University, St. Louis, 1898.

Shattuck, Frederica Van Trice, Professor of Public Speaking, 1916, 1907.
B. A., University of Wisconsin, 1905.

Shearer, Phineas Stevens, Professor of Animal Husbandry, 1919, 1912.
B. S. in A. H., Iowa State College, 1912.

Brown, Frank Emerson, Associate Professor of Chemistry, 1918, 1917.
A. B., Kansas State Normal School; S. B., University of Chicago, 1913; Ph. D., 1918.

Nelson, Victor Emanuel, Associate Professor of Physiological Chemistry, 1920, 1919.
B. S., University of Wisconsin, 1912; M. S., 1914.

Anderson, Arthur Lawrence, Animal Husbandry, 1920.
B. S., University of Minnesota, 1916.

* First date after the name indicates date of appointment to present position; the second date, when the first fails to do so, indicates the date of first appointment in the College.

Admission to College

Every student entering college must file an official statement of his previous educational work. Applications for credential blanks and all communications with regard to admission should be addressed to the Registrar. Official high school records should be filed with the Registrar at the close of the school year, if possible, and not later than the first Monday in September, December, or March. The Registrar will determine the value of all credentials and will notify the applicant of their acceptance. He will also assign the applicant for admission to his position in the course desired. Continuance in such assignment will be conditioned upon the student's doing creditable work.

Applicants for admission to all collegiate courses should be at least sixteen years of age.

Students may enter the College at the beginning of any quarter. Those wishing to enter at the beginning of the second or third quarter should find out from the Registrar whether entrance at that time is feasible in their case. The regular classes begin with the opening in September and the student is urged to commence at that time. Some Freshman subjects are, however, begun in each quarter. The College desires to emphasize the importance of thorough preparation, particularly in subjects that are to be continued in College. Since without thorough preparation satisfactory progress is impossible, students are urged to review carefully, before entering College, algebra through quadratics and English composition and grammar. Those desiring admission should examine *Requirements for Admission,* below.

REQUIREMENTS FOR ADMISSION

Definition of a Unit

The requirements for admission are stated in terms of units. A unit is defined as the equivalent of one high school study satisfactorily pursued during one school year at least thirty-six weeks in length, on the basis of five recitations a week, the course of study for which the student is registered requiring no more than four studies or twenty recitation periods a week. The length of the recitation period shall be at least forty minutes and the laboratory period shall be twice this length. A unit is equivalent to two semester credits.

PRE-TECHNICAL WORK

The following studies are necessary prerequisites to the taking of the collegiate courses outlined in this catalogue.

For the Divisions of Agriculture, Engineering, Home Economics, Industrial Science and Veterinary Medicine, viz.:

(A) ENGLISH, three (3) units.

HISTORY, CIVICS, ECONOMICS, one (1) unit.

MATHEMATICS:

ALGEBRA, one and one-half ($1\frac{1}{2}$) units. One-half unit may be omitted for the Division of Veterinary Medicine.

PLANE GEOMETRY, one (1) unit.

SOLID GEOMETRY, one-half ($\frac{1}{2}$) unit. This may be omitted for the Divisions of Agriculture, Home Economics, and Veterinary Medicine

(B) Enough work from the five principal groups of subjects, viz.: English, Foreign Language, History-Civics-Economics group, Math-

ematics and Natural Science to make a total of eleven (11) units including the units enumerated above under (A); but with a maximum of four units in any one foreign language, in English, in the History-Civics- Economics group, in Mathematics, or four and one-half units in Natural Science.

(C) ELECTIVES. Whatever work to the extent of four additional units the high school certifies as accepted by that school for graduation; subject to the definitions of units of entrance credit adopted by the North Central Association of Colleges and Secondary Schools, or in the bulletins published by the Iowa State Board on Secondary School Relations, and with only the following general restrictions:

a. Not less than one unit in Physics, Chemistry, or any foreign language, when one or more of these are included in the high school course.

b. Not less than one-half unit in any single subject, with the following exception: a minimum of one-third unit is accepted for work done in high schools organized on the basis of a four term year of twelve weeks each;; this does not reduce the minimum credit demanded in subjects requiring not less than one unit of entrance credit.

c. No credit for English Grammar, United States History, or Arithmetic unless taken in the third or fourth year of the secondary school course; or, in the case of Arithmetic, after the completion of one and one-half units in Algebra.

d. In the case of Freehand or Mechanical Drawing, Manual Training, and the laboratory elements of Domestic Science, a double class period (85 minutes) must be required as the equivalent of an ordinary recitation period (40 to 45 minutes) in a non-laboratory subject.

Subjects Required or Accepted for Admission

The following is a list of subjects which will be accepted as prerequisite to the collegiate courses together with the number of units which will be accepted in each. These subjects must be offered according to the groups specified under paragraphs A, B, and C above.

Group 1. ENGLISH.

(1) A total of not more than 4 units, including the required 3 units. Not less than 3 semesters in Literature; and 3 semesters in Composition, Rhetoric, and Grammar, except that no credit will be given for Grammar if taken before the eleventh grade.

Group 2. HISTORY, CIVICS, AND ECONOMICS.

(1) A total of not more than 4 units, including the required unit, and not more than the maximum credit here indicated in each case; except that no credit will be given for United States History if taken before the eleventh grade.

(a) Ancient History	½ to 1 unit
(b) Medieval and Modern History	½ to 1 unit
(c) English History	½ to 1 unit
(d) United States History	½ to 1 unit
(e) General History (but not in addition to Medieval and Modern History)	1 unit
(f) Civics	½ to 1 unit
(g) Political Economy	½ unit
(h) Sociology	½ unit

Group 3. Foreign Language.

(1) A total of not more than 4 units in any one foreign language. No credit will be given for less than one unit in any foreign language.

(a) Greek	1 to 4 units
(b) Latin	1 to 4 units
(c) French	1 to 4 units
(d) Spanish	1 to 4 units
(e) German	1 to 4 units
(f) Scandinavian	1 to 4 units

Group 4. Mathematics.

(a) Algebra (required)	1½ units
(b) Plane Geometry (required)	1 unit
(c) Solid Geometry	½ unit
(d) Plane Trigonometry	½ unit
(e) Advanced Algebra	½ unit

Group 5. Natural Sciences.

(1) A total of not more than 4½ units will be accepted in this group.

(a) Agriculture Plant Industry Animal Industry Rural Economics General Agriculture	½ to 2 units
(b) Astronomy	½ unit
(c) Biology, elementary	½ to 1 unit
(d) Botany	½ to 1 unit
(e) Chemistry, not less than	1 unit
(f) General Science	½ to 1 unit
(g) Geology	½ unit
(h) Physical Geography or Physiography	½ to 1 unit
(i) Physics, not less than	1 unit
(j) Physiology	½ unit
(k) Zoology	½ to 1 unit

Group 6. Electives. Whatever work to the extent of four additional units the accredited school certifies as accepted by that school for graduation; subject to the definitions of units of entrance credit adopted by the North Central Association of Colleges and Secondary Schools, or in bulletins published by the Iowa Board on Secondary School Relations. A total of not more than 4 units will be accepted in commercial, industrial, and miscellaneous subjects.

(1) Commercial subjects.

(a) Arithmetic (not in addition to Advanced Arithmetic, and only if taken after the completion of the required 1½ units in Algebra or in the latter half of the high school course)	½ unit
(b) Elementary Bookkeeping	½ to 1 unit
(c) Advanced Bookkeeping	½ to 1 unit
(d) Commercial Law	½ unit
(e) Stenography and Typewriting (combined)	1 to 2 units
(f) Business Correspondence	½ unit
(g) History of Commerce	½ unit
(h) Economic History of England	½ unit
(i) Economic History of United States	½ unit
(j) Materials of Commerce	½ unit
(k) Commercial Geography	½ unit

(2) Industrial subjects.

(a) Freehand or Mechanical Drawing	½ to 2 units
(b) Manual Training, i. e., Shop Work	½ to 4 units
(c) Domestic Science	½ to 2 units

(3) Miscellaneous.

(a) Public Speaking. (This may include Elocution and Debating); not accepted as a part of the three required units in English nor when the total amount of credit in English exceeds 4 units.)	½ unit
(b) Bible	½ to 1 unit
(c) Music	½ to 2 units
(d) Agriculture—additional units	½ to 2 units
(e) Psychology	½ to 1 unit
(f) Pedagogy and Methods	½ to 1 unit

Summary of Entrance Requirements by Divisions

	Division of Agriculture Units	Division of Engineering Units	Division of Home Economics Units	Division of Industrial Science Units	Division of Veterinary Medicine Units
Groups—					
1 English	3	3	3	3	3
2 History, Civics, Economics	1	1	1	1	1
3 Foreign Language*	..	..	..	..	..
4 Mathematics					
Algebra	1½	1½	1½	1½	1
Geometry, Plane	1 } 2½	1 } 3	1 } 2½	1 } 3	1 } 2
Geometry, Solid	..	½	..	½	..
5 Natural Sciences	..	..	..	..	..
6 Additional requirements in the above groups 1, 2, 3, 4, and 5: of these groups two must have 3 units each, and the five groups must have a minimum total of 11 units	4½	4	4½	4	5
Minimum total	11	11	11	11	11
7 Electives	4	4	4	4	4
Total units required for admission	15	15	15	15	15

Pre-technical Subjects Taught by the College

Any person who has been admitted to College but whose certificate does not show that these prerequisites have been fully met, together with those students whose records in class show that they are not prepared for college work, will be classified in such of these prerequisite studies as are necessary to make up their deficiencies. Credit earned in removing such deficiencies will not be applied toward college graduation in the specific course chosen.

* Each high school student is urged to complete two units in one foreign language.

METHODS OF ADMISSION

1. Admission to Graduates of IOWA HIGH SCHOOLS

A graduate of a public four-year high school in Iowa, who presents fifteeen units of work, will be admitted without examination to such collegiate work as he is prepared to pursue, upon presenting a certificate signed by the Superintendent or the Principal, specifying the branches of study and credits included within his high school course of study. A graduate of any private four-year high school, seminary, or academy approved by the Board of Secondary School Relations will be admitted on the same basis.

If a high school graduate does not meet present admission requirements to the course he desires to pursue the deficiency must be removed by studies taken at the College. Credit earned in removing such deficiencies will not be applied toward college graduation in the specific course chosen.

2. Admission from Other Secondary Schools

A student presenting a certificate from a secondary school not described under 1 above, may be admitted to collegiate courses by the following plan:

(a) He is to pass entrance examinations in subjects representing each of the main groups of subjects certified, for one-third of the number of acceptable credits so certified.

(b) The subjects for examination are to be selected by the examiner at the time of the examination and irrespective of the choice of the student.

(c) The total number of credits allowed on the certificate shall not exceed three times the number earned by examination.

(d) The total amount of credit gained by examination and certificate must equal at least the requirements for admission as stated on page 10 and preceding.

3. Admission to Graduates of High Schools in Other States

Graduates of high schools accredited by the state universities or other state accrediting agencies will be admitted by certificate. High school graduates, whose certificates would be accepted without examination by reputable colleges in the state in which they are located, provided these states have no accrediting system, will be admitted by certificate. Graduates of other schools will be required to take entrance examinations.

4. Admission to Non-graduates of High Schools

The student not a graduate presenting credits from a public four-year high school or a private four-year high school, academy, or seminary, approved by the Board of Secondary School Relations.

(A) Such student will not be admitted unless he presents as many as fourteen (14) acceptable units by certificate, by examination, or by both certificate and examination; and he is to be conditioned to the extent of enough units to bring the number up to fifteen (15) units. These units must be according to specified list of units found under pre-technical work on page 7.

(B) Entrance conditions must be removed within one calendar year after the student's admission, or before he registers for his second year's work; and the student is to be registered at once for the work in which he is deficient as a part of the normal amount of work allowed to students. If, however, he shows by the end of the first term that he is an unusually capable student, he may be permitted under the faculty regulations to register for additional work during the following term.

(C) Students admitted with conditions are not to be permitted to remove these conditions within the allotted one year by taking entrance examinations in subjects in which they have been taking college courses for credit.

If a student presenting the required entrance credit in a given subject fails to do satisfactory work in the succeeding college course in that subject, he is not to be assigned to a pre-technical course in the subject with a view of securing college credit for such pre-technical course.

5. Admission by Examination and on Other Evidences of Proficiency

Students who desire to enter by examination and who present satisfactory evidence that they have devoted sufficient time to preparation, will be given examinations in any subject required for entrance.

Students desiring to enter by examination will be expected to pass examinations in the required and elective subjects, according to work outlined on pages 8 to 10.

COLLEGE ENTRANCE EXAMINATIONS

Certificates of entrance examinations passed for admission to reputable universities and colleges, and certificates of examination passed under the direction of any of the College Entrance Examination Boards and the Regents of the State of New York, may be accepted as are accepted the certificates from our own accredited schools.

ACADEMIES AND PREPARATORY SCHOOLS

Credits certified from private secondary schools such as academies and seminaries, and from college preparatory schools, shall be estimated in accordance with the definition of the entrance unit and on the standard of four years of preparation and residence. College academies or preparatory departments conforming in their organization with the organization of the four-year accredited high school shall be treated as accredited schools, if the colleges themselves are regarded as standard colleges.

TEACHERS' CERTIFICATES

A certain number of entrance units may be granted upon the basis of a First Grade Uniform County Certificate for subjects marked 85% or above, as follows: Arithmetic, ½ unit; United States History, ½ unit; Physiology, ½ unit; Grammar, ½ unit; Civics, ½ unit; Economics, ½ unit; Algebra, 1 unit; Agriculture, ½ unit; Domestic Science, ½ unit; and for State Certificates when gained by examination, as follows: Second Grade, 10½ units; First Grade, 14 units; Life Diploma, 16 units.

6. Admission to Advanced Standing for High School Work

Advanced, or college, credit may be given for extra high school or secondary school work only on the following conditions:

1. The number of units reported and accepted must be in excess of sixteen (16).
2. There must be a rigorous examination for college credit.

ENTRANCE EXAMINATION PROGRAM

Admission to the entrance examinations is by permit. Permits may be obtained of the Registrar, Room 114, Central Building.

A representative from each department will conduct the examinations in Room 102, Central Building, on Thursday and Friday preceding classification.

Any student finding a conflict in his program should report to the Registrar for adjustment.

Thursday:

Algebra	8-10	A. M.
Plane Geometry	8-10	A. M.
English	10-12	A. M.
Latin, first year	1-3	P. M.
Latin, second year	1-3	P. M.
Botany	3-5	P. M.
Physiology	3-5	P. M.
Physiography	3-5	P. M.

Friday:

Algebra	8-10	A. M.
Solid Geometry	8-10	A. M.
History, General	10-12	A. M.
History, American	10-12	A. M.
History, English	10-12	A. M.
Civics	1-3	P. M.
Physiology	1-3	P. M.
Physiography	1-3	P. M.
Physics	3-5	P. M.
Latin, first year	3-5	P. M.
Latin, second year	3-5	P. M.

The Registrar will arrange for the other entrance examinations required by the candidates for admission.

Advanced Standing

Students of other colleges will be admitted to advanced standing in this College under the following conditions:

First, they must present a letter of honorable dismissal.

Second, the entrance requirements to this College must be fully satisfied (see Admission under Entrance Requirements).

Third, it is required that all credits from other colleges be sent by the proper officers of such institutions, duly certified, to the Registrar of this College; such certificates to include number of weeks the student has pursued the studies in question and the number of hours' credit received in each quarter or semester, as well as the portion of the subject covered.

No standing shall be accepted from any high school or academy for regular four-year college work. It is the privilege of any student to ask for and receive examination in any subject taught in any department of the College, provided that he can show to the satisfaction of the head of the department that he has made the necessary preparation.

Students from other colleges.

Work of recognized merit that has been taken in colleges and universities of good rank and standing will be credited for an equivalent amount of work so far as it applies in any course offered in this College.

Students taking work in this way will present official records of their work to the advanced standing committee at the office of the Registrar to ascertain the credits to be allowed. It will be understood between the applicant and the committee that the credits are only provisionally accepted and that their final acceptance depends wholly upon the student's maintaining a good average standing for one year.

Graduates of approved colleges, who are not candidates for a degree, may take special work in this institution under the rules governing special students, without having to complete the Freshman year in any of the college courses. Permission to take such special course and the subjects included therein depends upon the approval of the President of the College and the Dean of the Division or Head of the Department in which the student seeks enrollment.

Fees and Expenses

Expenses: The average expenses for men need not exceed from $500 to $700 per year.

Honor Scholarships: The State Board of Education has provided one honor scholarship for each four-year approved high school in the state. The scholarship represents the same value in cash whether presented at the State College or at any one of the other state institutions. It is worth at least $20.00 for the year, and at the State College this amount will be allowed on fees.

As soon as any school has made its nomination for the scholarship, the school authorities are expected to report the name and address of the

nominee, together with a signed certificate of scholarship, to the Secretary of Secondary Schools, State Board of Education, Des Moines, Iowa, who will approve the nomination if the conditions have been met, forward the proper credentials to the candidate, and send the certificate of credits to the institution elected.

Nominations should be made in June, and must be made not later than August 1st of each year.

The announcement regarding these honor scholarships is subject to change at any time.

Tuition: The Code of Iowa reads as follows: "The tuition in the College herein established shall be forever free to pupils from the state over sixteen years of age, who have been residents of this state six months previous to their admission."

To non-resident students a tuition fee of $17.00 per quarter is charged.

Tuition Scholarships: This form of Tuition Scholarships is intended only for those students from other states, who need such aid to secure a college education. The conditions on which this aid is granted are as follows: (1) The applicant must be in need of financial assistance; (2) Must be of good moral character; (3) Must give evidence of good preparation; (4) The recipient must give evidence of ability, by good standing in one of the regular courses.

The aid which is given from the Tuition Scholarships Fund is not regarded as a loan. If a student who receives this aid is able to return the amount in later years, it will be credited to his accounts on the books of the College Treasurer, and the sum will be put into the Tuition Scholarship Fund of the College for the use of future students.

All applications for these scholarships must be made on the uniform blanks furnished by the President.

Thirty-eight tuition scholarships are available: eight to each collegiate class, two to non-collegiate students, and four to students from foreign countries.

Application should be made to the Chairman of the Committee on Tuition Scholarships.

International Scholarships are granted to students from the countries of our allies in the war; said scholarships to exempt each of such students from the payment of fees and tuition to an amount not to exceed $100 annually. There are ten such scholarships.

Application should be made to the Chairman of the Committee on Tuition Scholarships.

Incidental and Janitor Fees: The regular incidental and janitor fee for the quarter is $6.00 for all students who complete their classification during the regular classification period. Beginning with the first day on which classes are held, the fee for college students will be $8.00 plus $1.00 additional for each day thereafter until the classification is completed. This fee is used as follows: hospital, $2.00; students' repair fund, $1.00; incidental and janitor service, balance. Students who register for part-time work, instead of paying the full incidental and janitor fee, may pay the hospital fee of $2.00, and 50c per credit hour for the hours or fraction of hours work taken.

Physical Training Fee: All men students (except those in Graduate College) are required to pay a fee of $1.00 per quarter. This fee entitles the student to the general use of the gymnasium including the lockers and shower baths. (Men who are required to classify in Physical Training shall pay a fee of $1.00 per quarter in addition to this fee.)

If the student severs his connection with the College, he shall obtain an order to settle from the Registrar, Room 114 Central Building, which

order shall be filed with the Treasurer. The refund will be made at the close of the quarter.

Laboratory Fees: Laboratory fees at the actual cost of breakage and usage are charged to the students, the Treasurer's receipt for such fees being required before the students are admitted to laboratories. For the amount of the fee in any study, see description of the study under its department. All refunds on laboratory fees will be made at the close of the quarter.

Diploma Fee: A diploma fee of $5.00 is payable before graduation.

Exemption from Fees: All honorably discharged soldiers and sailors of the World War shall be exempt from fees to the amount of $20 per year, said amount to be divided as follows: $6.00 incidental and janitor fee for the Fall quarter; $6.00 incidental and janitor fee and $1.00 general physical training fee for the Winter and for the Spring quarters. Students claiming this exemption shall show their discharge papers at the Treasurer's office when they enter college.

Board and Room: All men students can secure furnished rooms and board in clubs or private families adjacent to the College grounds at $6.00 per week. In order that undesirable rooms and houses may be avoided, young men students should consult the Secretary of the Young Men's Christian Association, Alumni Hall, Ames, Iowa. For sanitary or other reasons the College authorities reserve the right to forbid students from rooming in any particular house.

For the information of students, clubs, and interested private families the Committee on Student Accommodations has prepared standard regulations to assist in the management of houses which furnish rooms or board to students. These regulations are for the use of members of the instructional and clerical staffs and other members of the College community when reference to standard practice is desirable. Houses accommodating both students and others who are not students are expected to observe regulations for houses accommodating students. Copies of these regulations may be secured from the President's office, the Y. M. C. A. Secretary, or the Chairman of the Committee on Student Accommodations.

Text Books: All text books and stationery may be purchased at the College Book Store at about 20 per cent below the average retail price.

Freshman Expenses

Taking into consideration the items named under Fees and Expenses, the following is an approximate estimate of the expenses of a Freshman for each of the three quarters of the College year:

	Minimum Amount	Maximum Amount
Board (12 weeks)	$66.00	$96.00
Room rent (12 weeks—2 in a room)	21.00	36.00
Laundry	12.00	18.00
Incidental and janitor fee	6.00	8.00
Laboratory fees	10.00	12.00
Books and equipment	15.00	30.00

Note—See Library Regulations, page 37.

Note—To cover the cost of a satisfactory uniform it probably will be necessary for each student taking military instruction to make a deposit of not to exceed $45.00, $36.00 of which will be refunded during the first year, the remainder to be refunded during the second year subject to the regulations of the U. S. government.

Note: Prospective Freshmen should carefully consider the cost of the first year. No one should think of entering college unless he has money enough in his own right or from friends to meet his expenses in large part for his Freshman year. If he goes out of his Freshman year in debt, he is quite sure to be seriously embarrassed for the remainder of his college course. Provision should be made to meet college bills with the same business-like promptness with which one expects to meet other bills.

All men pay a general Physical Training fee of $1.00 per quarter.

Members of the R. O. T. C. will have their uniforms furnished by the government. All other students will receive information as to prices from the commanding officer of the Military department.

In addition to these items, at the beginning of the Freshman year each man student will be required to purchase a gymnasium suit for $5.00.

The student is also advised to purchase a student's activities ticket and to pay class dues.

The military and gymnasium suits and drawing equipment will be serviceable for the entire course.

If a student is a non-resident of the state $17.00 per quarter should be added for tuition.

The incidental and janitor fee, laboratory fees, books and equipment, gymnasium outfit, and some payment toward room rent and board are required in advance.

Classification and Standing

Junior and Senior College: The students are classified in Junior and Senior colleges. The Junior college is composed of all students in the Freshman and Sophomore years; the Senior college, of all students in the Junior and Senior years.

Amount of Work: The amount of work in each course is expressed in credits, a credit meaning one recitation a week, or its equivalent, throughout the quarter. It is considered that a one-hour recitation or lecture will require as much time including preparation as a three-hour laboratory, and therefore it is given the same credit. Any two-hour laboratory period is equivalent to two-thirds of a three-hour laboratory.

Number of Credits: No student shall classify in more than the maximum number of hours allowed in his course unless by his previous record he has shown exceptional ability. In no case shall he be classified in more than twenty hours. The student will be allowed to drop such extra work only upon permission of the classifying Dean; he will be required to drop it in case this or any other work in his schedule is being carried unsatisfactorily. A "condition" or a "not pass" secured in such extra work shall stand as a record, and shall be considered in choosing fraternity members, but an elective shall not be held against the student for graduation.

In general, students failing in any portion of a quarter's work will not be allowed to take full classification for the next quarter.

Classification: No student shall be admitted to any class or dropped from it, except by authority of the classifying officer.

Conflicts: Students shall not classify in conflicting studies without the approval of the classifying officer.

Standings: All the standings are based on the scale of 100. The passing grade is 75. A student receiving from 60 to 74 per cent inclusive in any course is conditioned, and allowed to make up the condition under the direction of the head of the department.

Back Studies: Students shall be classified in back studies in all cases in which such studies are taught, subject to the first rule under Number of Credits. Any exception to this rule must be for good and sufficient reason, approved by the classifying Dean.

Changing Course: A student will not be permitted to change from one course to another who has a "condition" or "not pass" in a subject not common to the two courses: or if he has more than one "condition" or "not pass" in subjects common to the two courses.

Senior Year: No student shall be considered a candidate for graduation who at the beginning of the Spring quarter of the Senior year has more than twenty hours of work to complete his course of study. If the uncompleted work is not offered in the Spring quarter, it shall be passed and reported to the Recorder not later than April first.

Division of Veterinary Medicine

Dean Stange, Veterinary Building

Vice Dean Bemis, Veterinary Building

The Division of Veterinary Medicine offers the following courses:

Four-year course: Veterinary Medicine ..... p. 18
Six-year course: Animal Husbandry and Veterinary Medicine ..... p. 21
Six-year course: Science and Veterinary Medicine ..... p. 19

The Division of Veterinary Medicine offers a four-year course leading to the degree of Doctor of Veterinary Medicine, and combined six-year courses with either the Division of Industrial Science or the Department of Animal Husbandry, and leading to both B. Sc. and D. V. M. degrees. The Veterinary Division consists of five educational departments, the head of each department being a man of broad experience in the particular branches of medical science which the department represents.

The following departments are included in the Division:

Department of Anatomy ..... p. 21
Department of Pathology ..... p. 23
Department of Physiology and Pharmacology ..... p. 24
Department of Medicine ..... p. 22
Department of Surgery ..... p. 25

The faculty of the Division of Veterinary Medicine consists of the Dean of the Division, together with the professors at the head of departments, the associate and assistant professors in the departments, and instructors. Representatives (to the number indicated) of the following departments outside of the Veterinary Division, in which the veterinary students do a part of their work, are considered members of the veterinary faculty: Chemistry (1), Botany (1), Animal Husbandry (1), Dairying (1), English and Economic Science (1), and Zoology (1).

Aside from the strictly educational departments in the Division, there is also the Department of Research in Animal Diseases, which gives the student rare opportunity to observe those phases of veterinary science in which this department is engaged.

Aside from the facilities which belong especially to the Veterinary Division, the equipment for instruction in Animal Husbandry, consisting of large flocks and herds of carefully selected breeds of live stock, helps to render practical instruction very efficient. The most perfect types of the different breeds are used for class work. In this way the work in Veterinary Medicine is linked with that in Agriculture, an arrangement which proves to be of inestimable value to veterinarians. The fact that the College is located in the richest live stock country in the world provides a rare opportunity for the veterinary student to study this phase of animal industry; it also enables him to observe a wealth of clinical cases both at the College Hospital, and under general practice conditions by means of the Ambulatory Clinic.

Work in Botany, Chemistry, Zoology, and other related sciences is adequately provided for in the special buildings for the accommodation of these several departments of college work. Each branch of study is presented to the student by a specialist.

Candidates for graduation must be twenty-one years of age, of good character, and must have passed examinations in all the required subjects in the course, to secure the degree of Doctor of Veterinary Medicine.

The following are a few of the many openings available to graduates:

General Practice: In view of the fact that the national live stock valuation is estimated at $10,000,000,000, it becomes obvious that the graduate possessing fitness and aptitude for live stock work will meet with a ready demand and receive substantial compensation for his services.

Bureau of Animal Industry: Veterinarians are in demand for inspection work in the Bureau of Animal Industry, United States Department of Agriculture, at salaries ranging from $1,400 to $2,500.

Army Veterinary Service: Excellent opportunities are now offered to young veterinarians in the United States Army. The Army Veterinary Corps is organized as a part of the Medical Department of the Army, and army veterinarians receive the rank, pay, and allowances of commissioned army officers, entering with the rank of lieutenant at $1,700 per year, with excellent opportunity for advancement in rank, with corresponding increases in salary and allowances. These positions are very desirable, and include a wide range of professional work.

Municipal and State Work: Owing to the fact that the larger cities are rapidly inaugurating systems of milk and meat inspection, there is an increasing demand for competent veterinarians drilled in Bacteriology and Pathology. A large number of state positions are also open, on account of the rigid laws governing inter-state shipment of live stock which are being enacted by the various states.

Sanitation: The value of the educated veterinarian as a sanitarian is being recognized and positions are open in this field.

Education and Research: The demand for men capable of doing investigation work in animal diseases, associated work in connection with State Experiment Stations, and of filling various teaching positions in agricultural and veterinary colleges, has been greater than the supply.

Commercial Work: The lines of commercial work which demand trained veterinarians are increasing yearly. These include positions with railway companies, live stock concerns, in biological laboratories, pharmaceutical houses, etc. The demand for qualified veterinarians exceeds the supply, and many graduates go directly from college to positions paying $150 per month and upward.

Course in Veterinary Medicine

Leading to the degree of Doctor of Veterinary Medicine.

FRESHMAN YEAR

Fall Quarter	Credits[2]	Winter Quarter	Credits	Spring Quarter	Credits
Gross Anatomy Vet. Anat. 110[1]	4	Gross Anatomy Vet. Anat. 120	5	Gross Anatomy Vet. Anat. 130	5
General Zoology Zool. 1aC	3	General Zoology Zool. 1bC	2⅔	Microscopic Anatomy Vet. Anat. 111	2⅓
Market and Breed Types A. H. 121	2⅓	Market and Breed Types A. H. 122	2⅓	Market and Breed Types A. H. 123	2⅓
Structural Botany Bot. 140	2⅔	English Engl. 301a	2	English Engl. 301b	2
General Chemistry Chem. 511	5	Organic Chemistry Chem. 821	5	Physiological Chem. Chem. 822	5
Military 21a	1	Military 21b	1	Military 21c	1
Physical Training P. T. 10a	R[3]	Physical Training P. T. 10b	R	Physical Training P. T. 10c	R
	18		18		17⅔

[1] The number refers to the description of the study.
[2] For definition of a credit, see page 21.
[3] R indicates that the study is required, without credit, for graduation.

SOPHOMORE YEAR

Fall Quarter	Credits
Gross Anatomy Vet. Anat. 212	5
Bacteriology Vet. Path. 210	4
Microscopic Anatomy Vet. Anat. 121	2⅓
Pharmacy Vet. Phys. 311	2⅔
Comp. Physiology Vet. Phys. 211	4
Military 22a	1
Physical Training P. T. 11a	R
	19

Winter Quarter	Credits
Gross Anatomy Vet. Anat. 222	5
Bacteriology Vet. Path. 220	4
Microscopic Anatomy Vet. Anat. 131	2⅓
General Pathology Vet. Path. 223	2
Comp. Physiology Vet. Phys. 221	4
Military 22b	1
Physical Training P. T. 11b	R
	18⅓

Spring Quarter	Credits
Gross Anatomy Vet. Anat. 232	6
General Pathology Vet. Path. 233	4⅓
Comp. Physiology Vet. Phys. 231	4
Embryology Zool. 202	3
Military 22c	1
Physical Training P. T. 11c	R
	18⅓

JUNIOR YEAR

Fall Quarter	Credits
Medicine Vet. Med. 313	5
Special Pathology Vet. Path. 310	5
Materia Medica Vet. Phys. 312	3
General Surgery Vet. Surg. 327	3
†Clinics Vet. Surg. 314	3
	19

Winter Quarter	Credits
Medicine Vet. Med. 323	5
Animal Parasites Vet. Path. 325	4
Therapeutics Vet. Phys. 326	3
General Surgery Vet. Surg. 337	3
†Clinics Vet. Surg. 324	3
	18
Elective Animal Breeding A. H. 251	3

Spring Quarter	Credits
Medicine Vet. Med. 333	5
Milk Inspection Dy. 66	2
Therapeutics Vet. Phys. 336	4
Special Surgery Vet. Surg. 411	5
†Clinics Vet. Surg. 334	3
	19

SENIOR YEAR

Fall Quarter	Credits
Clinics Vet. Surg. 413	4
Medicine Vet. Med. 412	4
Special Surgery Vet. Surg. 421	5
Obstetrics Vet. Surg. 414	4
†Post Mortem Vet. Path. 416	1
	18
Elective Surg. & Applied Anat. Vet. Anat. 510	2

Winter Quarter	Credits
Clinics Vet. Surg. 423	4
Medicine Vet. Med. 422	4
Business Law Ec. Sci. 230C	3
Special Surgery Vet. Surg. 431	5
†Extempore Speech P. S. 30	2
	18

Spring Quarter	Credits
Clinics Vet. Surg. 433	4
Medicine Vet. Med. 432	4
Animal Feeding A. H. 241	3
Food Hygiene Vet. Path. 430	3
†Serum Therapy Vet. Path. 338	4
	18
Elective Therapeutics Vet. Phys. 533	1

Course in Industrial Science and Veterinary Medicine (six years)

Leading to the degree of Bachelor of Science and the degree of Doctor of Veterinary Medicine.

The following course is designed to meet the need of the students who wish to secure a thorough foundation in the biological and chemical sciences preliminary to the studying of veterinary medicine. The degree of Bachelor of Science is granted at the end of the fourth year, and the

† Part credit may be omitted by students appointed to the Reserve Officers' Training Corps, arrangements to be made with the classifying officer.

degree of Doctor of Veterinary Medicine upon the completion of the sixth year. The increased time at the disposal of the student gives an opportunity to prepare himself efficiently for investigational work.

At the present time the better colleges granting degrees in human medicine require two years of collegiate preparation. Veterinary Medicine is quite as exacting in its requirements of students, particularly those who wish to go into governmental or research work. The opportunities open to students well grounded both in science and in veterinary medicine are excellent. Many positions in the Bureau of Animal Industry of the Department of Agriculture, in the experiment stations of our land grant colleges, and in the teaching staffs of our various veterinary schools and agricultural colleges, are opened every year. It has been in the past practically impossible to secure men with the right training. This course is designed to train men for such positions.

For pre-technical studies reqquired for this course, see page 7.

FRESHMAN YEAR

Fall Quarter	Credits[2]	Winter Quarter	Credits	Spring Quarter	Credits
General Chemistry Chem. 502[1]	4	General Chemistry Chem. 503	4	Qualitative Analysis Chem. 504	4
Composition Engl. 40a	3	Exposition Engl. 40b	3	Narration & Desc. Engl. 40c	3
German Mod. Lang. 410a	4 or 5	German Mod. Lang. 410b	4 or 5	German Mod. Lang. 410c	4 or 5
Gross Anatomy Vet. Anat. 110	4	Gross Anatomy Vet. Anat. 120	5	Gross Anatomy Vet. Anat. 130	5
Military 21a	1	Military 21b	1	Military 21c	1
Physical Training P. T. 10a	R[3]	Physical Training P. T. 10b	R	Physical Training P. T. 10c	R
Electives	0-1				
	17		17-18		17-18

SOPHOMORE YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Applied Organic Chem. 751a	3⅓	Applied Organic Chem. 751b	3⅓	Agr. Analysis Chem. 752	3⅓
Mathematics Math. 13	4	Mechanics & Heat Phys. 101	3	Extempore Speech P. S. 30	3
Sci. German Mod. Lang. 425a	3	Sci. German Mod. Lang. 425b	3	Sci. German Mod. Lang. 425c	3
Micro. Anatomy Vet. Anat. 111	2⅓	Micro. Anatomy Vet. Anat. 121	2⅓	Micro. Anatomy Vet. Anat. 131	2⅓
Gen. Zoology Zool. 1aA	3	Gen. Zoology Zool. 1bA	3	Gen. Zoology Zool. 1cA	3
Military 22a	1	Military 22b	1	Military 22c	1
Physical Training P. T. 11a	R	Physical Training P. T. 11b	R	Physical Training P. T. 11c	R
		Electives	2	Electives	2
	16⅔		17⅔		17⅔

THIRD AND FOURTH YEARS

The student will classify with the Dean of Veterinary Medicine as a Senior college student in Industrial Science and Veterinary Medicine. In the quarter in which he completes the requirements for the Bachelor's degree, he shall also register with the Dean of Industrial Science. He shall outline his course of study, guided by the following rules:

1. A minimum of 18 hours per quarter shall be carried.
2. All subjects of the Freshman and Sophomore years of the four-year

[1] The number refers to the description of the study.
[2] For definition of a credit, see page 21.
[3] R indicates that the study is required, without credit, for graduation.

course in veterinary medicine not already taken shall be completed (excepting Chemistry 511, 821, 822, and Zoology 1a, 1b).

3. English 441 or English 442 and at least fifteen hours of free electives, i. e., subjects not required of students pursuing the four-year course in Veterinary Medicine, shall be completed.

The degree of Bachelor of Science will be conferred upon fulfillment of the preceding requirements.

FIFTH AND SIXTH YEARS

The student will classify with the Dean of Veterinary Medicine as a Senior college student in Veterinary Medicine. He shall outline his course in conformity with the following requirements:

1. A minimum of 18 hours per quarter shall be carried.
2. All subjects of the Junior and Senior years of the four-year course in Veterinary Medicine shall be completed.
3. Free electives shall be chosen to fill the number of credit hours to the required 18.

The degree of Doctor of Veterinary Medicine will be conferred upon the fulfillment of the preceding requirements.

Course in Animal Husbandry and Veterinary Medicine

On account of a demand for a course offering degrees in both Animal Husbandry and Veterinary Medicine, a combined course has been outlined so that the student pursuing this course may receive both degrees in six years.

Short Course for Practitioners in Veterinary Medicine

It is proposed to arrange the course so that practitioners may spend a few days at Ames and get the latest and best that is being made available in any state or country.

Definition of a Credit: The amount of work in each study is expressed in credits, a credit meaning one recitation or its equivalent a week throughout the quarter. It is considered that a one-hour recitation or lecture will require as much time including preparation as a three-hour laboratory, and therefore should be given the same credit. Any two-hour laboratory period is equivalent to two-thirds of a credit.

Study Numbers: In each department the studies, for convenience of reference, are given in numerical order.

VETERINARY ANATOMY

Professor Murphey, Anatomy Building, Veterinary Group, Room 117
Assistant Professor Aitken; Instructor McNutt; Fellow Wheaton

For information concerning the Division of Veterinary Medicine, see page 17.

The Department of Anatomy gives instruction to students in either Veterinary Medicine or Animal Husbandry. The laboratories are well equipped. In histology and osteology each student is assigned an individual desk provided with a microscope, 100 permanent mounts of tissue, laboratory notes, and one-half skeleton of disarticulated bones of the horse. The dissecting room is modern, sanitary, and well equipped. All cadavers are preserved. Students in Animal Husbandry prepare for their work in nutrition and stock judging. Veterinary students should have a detailed knowledge of the structure of the domestic animals and birds to understand properly Physiology, Pathology, Diagnosis, Surgery, and Medicine.

The following methods are used in teaching anatomy: didactic instruction, quiz, specimen demonstration, specimen study, lantern slide demon-

stration, dissection, sketching, the use of the living horse for palpating and outlining the structures. A large and well selected number of specimens and lantern slides is used in the class and laboratory demonstrations to emphasize the most important structures and their relations from a clinical standpoint. These are also available for student use. In the laboratory special attention is given to fascial compartments, joint pouchings, vaginal sheaths, bursae, and topography. Class work in splanchnology also covers the microscopic anatomy.

The class work is mostly quizzes, with supplemental statements and demonstrations by the instructors to fix the knowledge of the structures of the animal body gained in the laboratory by the student.

Description of Studies

110, 120, 130. **Gross Anatomy, Osteology, Arthrology, Splanchnology, Myology.** Demonstrations; dissection of horse; systemic anatomy of bones, joints, digestive, respiratory, genito-urinary systems. (110) Fall. Rec. 3; lab. 1, 3 hr.; credit 4; fee $1.00. (120) Prerequisite 110. Winter, Rec. 2; labs. 3, 3 hr.; credit 5; fee $2.00. (130) Prerequisite 120. Spring. Rec. 2; labs. 3, 3 hr.; credit 5; fee $2.00. Professor Murphey.

111, 121, 131. **Microscopic Anatomy.** Use of microscope. Cells and tissues, morphologically and comparatively. Comparative amounts of parenchyma and supporting tissue. (111) Spring. Lect. 1; labs. 2, 2 hr.; credit 2⅓; fee $2.00. (121) Prerequisite 111. Fall. Lect. 1; labs. 2, 2 hr.; credit 2⅓; fee $4.00. (131) Prerequisite 121. Winter. Lect. 1, labs. 2, 2 hr.; credit 2⅓; fee $2.00. Professor Murphey.

212, 222, 232. **Gross Anatomy, Myology, Angiology, Neurology, Comparative Anatomy.** Systemic anatomy of muscles, fascial, vascular, and nervous systems. Dissection of horse, ox, sheep, pig, dog, chicken. (212) Prerequisite 130. Fall. Rec. 3; labs. 2, 3 hr.; credit 5; fee $3.00. (222) Prerequisite 212. Winter. Rec. 2; labs. 3, 3 hr.; credit 5; fee $3.00. (232) Prerequisite 222. Spring. Rec. 3; labs. 3, 3 hr.; credit 6; fee $3.00.

510. **Surgical and Applied Anatomy.** A demonstration subject. Dissections before the class. Specimens, lantern slides, and living animals will be used. Prerequisite, first three years of the Veterinary Course. Fall. Lect. 1; lab. 1, 3 hr.; credit 2; fee $2.00.

610. **Anatomy of Domestic Animals.** (For Animal Husbandry students.) The skeleton, articulations, muscles, digestive, respiratory, and genito-urinary organs of horse and ox. Lectures and demonstrations. Fall or Winter. Rec. 2; demonstrations 1; credit 3; fee $1.00.

713. **Research in Anatomy.** Problems relating to Animal Husbandry, Physiology, Pathology, and Surgery. Anatomical problems of systemic, topographic, or comparative nature. Labs. 3 or 4; credit 3 or 4. Professor Murphey.

714. **Research in Microscopic Anatomy.** Physiological histology; problems of importance to pathology or those relating to histogenesis or morphology. Credit 3-10 as arranged. Professor Murphey.

VETERINARY MEDICINE

Professor Stange, Administration Building, Veterinary Group, Room 106
Associate Professor Covault; Assistant Professor Walsh

For information concerning the Division of Veterinary Medicine, see page 17.

The study of medicine summarizes and shows the application in practice of the training previously received in Anatomy, Physiology, Pathology, Bacteriology, and Therapeutics. The work is given in the form of lectures and clinical demonstrations and extends throughout the Junior and Senior years. Diagnostic methods employed in the detection of animal diseases are carried out by each student on the various organs and systems of the different species of animals. The surrounding community furnishes an abundance of material for such work. When cases cannot be brought to the hospital, students are taken to the farms and given actual practice in the diagnosis and treatment of the cases under the direct supervision of an experienced member of the faculty. The latter arrangement provides a

large variety of cases and gives opportunity to observe both healthy and diseased animals under natural farm conditions and the student is taught how to overcome difficulties frequently met with on farms where facilities are restricted.

Infectious diseases are considered in detail, diagnosis and methods of control being especially emphasized.

General sanitation and hygiene are taken up with special reference to the most practical means of keeping animals in health and preventing diseases.

On completion of the Senior year the student has not only the theoretical knowledge, but some of the most practical methods of applying such knowledge. The transition from the student to the practitioner presents little difficulty after such training.

Description of Studies

313, 323, 333. **Medicine.** Methods employed in the diagnosis of animal diseases and a consideration of diseases not widely spread. Prerequisites Vet. Anat. 130, 131, 232; Vet. Path. & Bact. 210, 220, 223, 233; Vet. Phys. 211, 221, 231. Fall, Winter, and Spring respectively. Rec. 4; lab. 1, 3 hr.; credit 5 each quarter; fee $2.50 the fall quarter.

314, 324, 334, 413, 423, 433. **Clinics.** From one to three P. M. each day of the week except Sunday, clinics are held in the Veterinary Hospital.

412, 422, 432. **Medicine.** Infectious diseases; their diagnosis, and methods of control; general sanitation and hygiene. Prerequisites 313. 323, 333; Vet. Phys. 326, 336; Vet. Path. 310; Vet. Surg. 327, 337. Fall, Winter, Spring respectively. Rec. 4; credit 4 each quarter.

VETERINARY PATHOLOGY

Professors Benbrook, Murray, Pathology Building, Veterinary Group, Room 113

Associate Professor Rice, Room 112
Instructor Biester

For information concerning the Division of Veterinary Medicine, see page 17.

The Department of Veterinary Pathology and Bacteriology occupies the northeast building of the veterinary group. Two offices open directly into a private laboratory that is used by those in charge to investigate problems pertaining to their lines of work. A large general student laboratory facing the north, east, and west is well lighted and supplied with individual equipment for a section of thirty students. A pathology preparation room, a bacteriology preparation room and a room-incubator open into the main laboratory. A class lecture room to accommodate fifty students is equipped with a combination lantern-slide, microscopic projection, and photomicrographic machine. In the basement are six rooms for the housing of small experimental animals, for the preparation and mounting of museum specimens, and for storage of supplies, and a large storage room for museum specimens used by the department.

The work of the department consists of a systematic study of the causes of disease and the manner in which these causes bring about alterations in the anatomical structure and chemical and physiological activities of animal tissues. The application of this study renders diagnosis more accurate and forms the foundation for rational therapeutics.

Description of Studies

210, 220. **General and Pathogenic Bacteriology.** Morphology, classification, cultivation, and physiologic characters of bacteria. Principles of infection and immunity. Fall and Winter respectively. Rec. 2; labs. 2, 3 hr.; credit 4; fee $2.50 each quarter.

223, 233. **General Pathology.** The causes of disease and their effects upon the anatomical and chemical relations and physiological activities of the body. Prerequisites 210, 220, Vet. Anat. 130, 131. (223) Winter. Lect. 2; credit 2. (233) Spring. Lect. 3; labs. 2, 2 hr.; credit 4⅓; fee $4.00.

310. **Special Pathology.** Etiology, pathogenesis, lesions and results of disease in organs or systems of organs; also specific infectious diseases. Prerequisite 233. Fall. Rec. 4; lab. 1, 3 hr.; credit 5; fee $5.00. Professor Benbrook.

325. **Animal Parasites.** Classification, life history, and effect produced by the principal internal and external parasites of domestic animals. Prerequisite Zool. 1b. Winter. Rec. 3; lab. 1, 3 hr.; credit 4; fee $2.00.

338. **Immunity and Serum Therapy.** Theories of immunity and immunization; preparation of bacterins, vaccines, and antisera; serum tests in the diagnosis of disease. Prerequisite 220. Spring. Rec. 3; labs. 1, 3 hr.; credit 4; fee $3.00. Professor Murray.

416. **Post Mortem Pathology.** Application and technique of autopsies with discussion of reports on cases autopsied in coöperation with the Departments of Medicine and Surgery. Prerequisite 310. Fall. Rec. 1; credit 1.

430. **Food Hygiene.** Designed to meet the requirements of federal, municipal and rural meat inspection; also milk and dairy inspection and hygiene. Prerequisite 310. Spring. Rec. 3; credit 3.

634. **Livestock Sanitation and Disease.** (For Agricultural students.) Prerequisite Bact. 3. Spring. Rec. 3; credit 3.

635. **Poultry Parasites, Diseases, and Hygiene.** (For Poultry Husbandry students.) Spring. Rec. 2; credit 2.

715. **Research in Pathology.** (For students of the Graduate College.) Prerequisite 310 or equivalent. Professor Benbrook.

716. **Research in Bacteriology.** (For students of the Graduate College.) Prerequisite 220 or equivalent. Professor Murray, Associate Professor Rice.

VETERINARY PHYSIOLOGY AND PHARMACOLOGY

Professor Bergman, Physiology Building, Veterinary Group, Room 100
Instructor Judisch; Fellow Yarborough; Student Assistant Smith

For information concerning the Division of Veterinary Medicine, see page 17.

The southeast building of the Veterinary group is devoted to work in Physiology, Pharmacy, Materia Medica, and Therapeutics. This building was planned for the investigation and teaching of physiological and pharmacological subjects, and is admirably arranged and equipped for the pursuance of general or research work along these lines.

In the general laboratories, students are provided with individual equipment as far as possible, and thus self reliance and individual responsibility are developed. The laboratories have been newly equipped and are thoroughly up-to-date. The latest apparatus for practical physiological, pharmacological, or pharmaceutical demonstration and laboratory work is available.

Before attempting a proper conception of diseased conditions it is necessary to have an understanding of the normal functions of the body structures. The purpose of the work in Physiology is to make a detailed study of the normal functions and activities of the cells, tissues, organs, and systems constituting the animal body. The work is presented in the form of lectures, recitations, demonstrations, and practical laboratory work in which the chemical and physical processes of the animal body are considered in logical order. The lecture work is supplemented by the use of dissected specimens, practical demonstrations, and drawings. The laboratory work is devoted to the study of the respiratory, circulatory, muscular, and nervous systems; also digestion and absorption, and the circulating fluids of the body.

As Pharmacy and Materia Medica are prerequisite to Therapeutics, these subjects are considered in the order named; the work is presented as lectures, recitations, laboratory, and demonstration work.

Students in Industrial Science desiring to major in Veterinary Physiology, see page 20 for Freshman and Sophomore year; and for general instructions as to enior college work, see page 20.

Description of Studies

211, 221, 231. **Comparative Physiology.** Physiology of blood, lymph; circulatory, respiratory, muscular, and nervous systems; digestion, absorption, metabolism, secretion, excretion, ductless glands, nutrition. Fall, Winter, and Spring respectively. Lect. and rec. 3; lab. 1, 3 hr.; credit 4; fee $1.50 each quarter.

311. **Pharmacy.** Processes and principles, official drugs and chemicals; their solubility and incompatibility. Preparation of official preparations. Prescription writing and pharmaceutical arithmetic. Fall. Rec. 2; lab. 1, 2 hr.; credit 2⅔; fee $1.50.

312. **Materia Medica.** Definitions and discussions of the composition of drugs, classifications, official preparations, incompatibilities, combinations, and the forms of administration. Fall. Rec. 3; credit 3.

326, 336. **Therapeutics.** Modes of action of drugs; their absorption, elimination, dosage, indications, and contra indications for use; methods and time of administration. Prerequisites 211, 221, 231, 311, and 312. Winter and Spring respectively. Credit 3 and 4.

533. **Advanced Therapeutics.** Selected work especially arranged to meet the needs of Senior veterinary students planning upon entering active practice. Prerequisite 326 and 336. Spring. Lect. 1; credit 1.

611. **Comparative Physiology.** (For Agricultural students.) Physiology of the blood, lymph, circulatory and respiratory systems, ductless glands, digestive tract, and organs of elimination. Prerequisite Vet. Anat. 610. Fall. Lect. and rec. 3; credit 3.

710, 711, 712. **Comparative Physiology.** (For Agricultural students.) Minor work for graduate students in agriculture, doing major work in general nutrition, production problems, animal feeding, breeding, etc. Credit 3 or 5 as arranged. Fall, Winter, and Spring respectively. Professor Bergman.

715. **Research in Physiology.** Research in physiological subjects relative to veterinary science. Professor Bergman.

VETERINARY SURGERY

Professor Bemis, Administration Building, Veterinary Group, Room 108
Associate Professor Guard; House Surgeon Dr. Breakenridge;
Pharmacist Anderson

For information concerning the Division of Veterinary Medicine see page 17.

The Department of Surgery is especially well equipped for its teaching. The hospital is 160 feet long by 60 feet wide, has a stall capacity for 42 large animals, 22 dogs, and other small animals, and contains three operating rooms. The largest, 65 by 30 feet, is used for examining animals as they are admitted, and for minor operations and treatment. Joining it is a clinical amphitheatre; next to this is the second operating room for large animals, equipped with a hydraulic operating table, X-ray apparatus, and other conveniences. Between the operating room and clinic room is a dispensary and instrument room. On the upper floor, near the kennels, is a small animal operating room equipped with white enamel furniture; also operating instruments and modern steam sterilizers for water, instruments, and dressings.

During the school year more than eight thousand cases, including a wide range of surgical conditions, are operated upon and treated in the clinics, each case being assigned to a Senior student with one or more Junior assistants. All operations are performed by the professors in

charge, and the after treatment is always under their direction, the idea being that the clinical cases are in no way experimental, but that they shall be treated as similar cases are to be treated later in practice.

All the class room work in surgery is conducted in the amphitheatre in the hospital building, where animals affected with conditions under discussion as well as instruments and apparatus to be used in diagnosis, treatment, or restraint, can be brought before the class. Clinic cases are constantly used to correlate the theoretical and the practical.

Description of Studies

314, 324, 334. **Clinics.** Students are required to assist in daily examination and treatment of hospital cases, in compounding prescriptions and in post mortem examinations. Prerequisite same as 327. Fall, Winter, and Spring respectively. Labs. 6, 2 hr.; credit 3 each quarter.

327, 337. **General Surgery.** Class room instruction supplemented by clinical instruction in the principles of surgery, surgical technique and lameness. Prerequisite first two years of Vet. Course. (327) Fall. Rec. 3; credit 3. (337) Prerequisite 327. Winter. Rec. 3; credit 3.

411, 421, 431. **Special Surgery.** A study of the surgical diseases of the various regions of the body, including dentistry and principles of horseshoeing. Prerequisite 337. Spring, Fall, and Winter respectively. Rec. 4; lab. 1, 3 hr.; credit 5; fee $4.00 each quarter.

413, 423, 433. **Clinics.** Students act as assistants to the clinical professors in the actual treatment of clinical cases, and in post mortem examinations. Prerequisite 334. Fall, Winter, and Spring respectively. Labs. 6, 2 hr.; credit 4 each quarter.

414. **Obstetrics.** Principles and practice of obstetrics. Especial attention given to the subject of sterility. The clinics furnish many actual cases. Prerequisites Vet. Anat. 232, Vet. Phys. 231, and Zool. 202. Fall. Rec. 4; credit 4.

612. **Unsoundnesses of the Horse.** (For Agricultural students.) Anatomy and physiology of the foot and limbs; common unsoundness of the horse; principles of shoeing. Prerequisite Vet. Anat. 610. Fall. Rec. 2; credit 2.

633. **Obstetrics.** (For Agricultural students.) A study of reproduction, sterility, hygiene of pregnant animals, and care of new born animals. Prerequisites Zool. 201, Vet. Anat. 610, and Vet. Phys. 611. Spring. Rec. 1; credit 1.

717. **Research in Surgery.** Special problems connected with surgical conditions, surgical technique, and sterility of animals. Labs. 2 or 3 hr.; credit 2 or 3. Professor Bemis.

VETERINARY INVESTIGATION

Raymond A. Pearson, LL. D.....President
C. H. Stange, D. V. M.....Director
Chas. Murray, B. S., D. V. M.....Professor
S. H. McNutt, D. V. M.....Assistant Professor
Paul K. Purwin.....Laboratory Assistant

The department is being supported by special appropriations made by the legislature, and laboratories and experimental animal rooms are equipped for this special work. There are but few animal diseases entirely understood, and many are understood in no particular. It is the object of this department to investigate such diseases with the view of working out some method by which they can be controlled or eradicated.

One feature of the work of this department is the diagnosis of disease by laboratory methods and examination of tissues. Veterinarians and livestock owners are encouraged to send to the laboratory tissues and materials from doubtful cases. Careful and painstaking examination of these is made, and animal inoculations are carried out for those cases which promise something new or rare. Reports of such examinations are submitted to the sender, and his coöperation is solicited in working out the cases. Accurate records of such work are kept on file in the laboratory and are available to members of the Veterinary Division at all times

for their study and use. Thus the work of the department supports the instruction work and assists in keeping such instruction modern.

STATE BIOLOGICAL LABORATORY

C. H. Stange, D. V. M. ..... Director

The State Biological Laboratory for the manufacture of hog cholera serum, toxines, vaccines, and biological products is maintained as a department in the Division of Veterinary Medicine. While hog cholera serum is the chief product, many other biological products and vaccines are produced in the Division, and the work is at all times available for study by the students of the College in general, and for those of the Veterinary Division in particular.

VETERINARY MEDICAL SOCIETY

The Veterinary Medical Society is an organization of veterinary students. Two meetings are held each month and topics relating to veterinary medicine are discussed. All veterinary students become members and much benefit is derived along literary, social, and professional lines.

ANIMAL HUSBANDRY

Professor Kildee, Agricultural Hall, Room 103

121. **Market and Breed Types of Beef and Dual-Purpose Cattle.** (Veterinary students.) Judging. Fall. Rec. 1; labs. 2, 2 hr.; credit 2⅓; fee $1.00.

122. **Market and Breed Types of Sheep and Horses.** (Veterinary students.) Similar to 121. Winter. Rec. 1; labs. 2, 2 hr; credit 2⅓; fee $1.00.

123. **Market and Breed Types of Dairy Cattle and Hogs.** Similar to 121. Spring. Rec. 1; labs. 2, 2 hr.; credit 2⅓; fee $1.00.

241. **Animal Feeding.** Composition and digestibility of feeding stuffs preparation; feeding standards and calculation of rations. Spring. Lect. 3; credit 3.

251 **Principles of Breeding.** Physical basis of heredity; Mendelism; live stock breeding. Prerequisites 111, 112, 113, or 121, 122, 123. Winter. Lectures 3; credit 3.

BOTANY

Professor Pammel, Central Building, Room 314

140. **Structural Botany.** (Veterinary students.) Fall. Rec. 2; lab. 1, 2 hr.; credit 2⅔; fee $3.00.

460. **Poisonous Plants.** History of toxicology, poisoning by ptomaines, toxins, and other agents, including thallophytes and higher plants in systematic order.

A. **Elementary Principles.** (Veterinary or Science students.) Plants responsible for poisoning animals. Prerequisite 140. Fall. Rec. 2; lab. 1, 3 hr.; credit 3; fee $3.00.

CHEMISTRY

Professor Coover, Chemistry Building, Room 202

511. **General Chemistry.** (Veterinary students.) Principles and the more important elements, including the preparation of some of their compounds. Fall. Rec. 3; labs. 2, 3 hr.; credit 5; deposit $10.00.

821. **Applied Organic Chemistry.** (Veterinary students.) Attention given to organic compounds of biological importance. Prerequisite 511. Winter. Lect. 2; rec. 1; labs. 2, 3 hr.; credit 5; deposit $12.50.

822. **Physiological Chemistry.** (Veterinary students.) Chemistry of the animal body; digestion; metabolism; nutrition. Prerequisite 821. Spring. Lect. 2; rec. 1; labs. 2, 3 hr.; credit 5; deposit $12.50.

DAIRYING

Professor Mortensen, Dairy Building, Room 9

66. **Milk Inspection.** Testing of milk and cream by the Babcock methods. Inspection of milk and milk products. Spring. Rec. 1; lab. 1, 3 hr.; credit 2; fee $1.50.

ECONOMIC SCIENCE

Applied Economics and Social Science

PROFESSOR BRINDLEY, Central Building, Room 223

230. **Business Law.** Law of contracts, sales, bailments, guaranty, insurance, negotiable instruments, partnerships and corporations, real and personal property. Separate sections provided for (A) engineers, (B) home economics, and (C) veterinary medicine. Fall and Winter. Rec. 3; credit 3.

ENGLISH

PROFESSOR NOBLE, Central Building, Room 18

301a, 301b. **Composition.** (301a) Fundamental principles. Daily themes; ease and correctness in sentence and paragraph. (301b) Written and oral composition, including business letters. Winter and Spring, respectively. Rec. 2; credit 2 each quarter.

LIBRARY

ASSISTANT LIBRARIAN, MISS RUSH, Central Building, Room 112

Veterinary Library, Veterinary Building. This book collection includes works on zoology, bacteriology, medicine, veterinary surgery, veterinary anatomy, veterinary physiology, and veterinary pathology. About one-fourth of the current periodicals are French and German.

MILITARY SCIENCE AND TACTICS

PEARL M. SHAFFER, Col., Inf., U. S. A.
J. K. BOLES, Major, F. A., U. S. A.
HERMAN S. DILLWORTH, Major, Cav., U. S. A.
EARL E. GESLER, Capt., C. of E., U. S. A.
GEORGE P. WINTON, Capt., F. A., U. S. A.
RALPH SLATE, 1st Lt., Inf., U. S. A.
JAMES RUSH LINCOLN, Professor

21a, 21b, 21c. Principles of organization and administration of a company; military hygiene; courtesies and customs of the service; interior guard duty; ceremonies; infantry weapons. Fall, Winter, Spring respectively. Lecture 1; drills 2; credit 1 each quarter.

22a, 22b, 22c. Military map reading and sketching; leadership; combat; infantry weapons; minor tactics. Fall, Winter, Spring. Lecture 1; drills 2; credit 1 each quarter.

PHYSICAL TRAINING

PROFESSOR MAYSER, Gymnasium, Room 202

10a, 10b, 10c. **Physical Training.** Personal Hygiene. Floor Tactics. Calisthenics. Gymnastics. Swimming. Outdoor and Indoor Games and Athletics. Efficiency Lectures. First Aid. Fall, Winter, and Spring respectively. Labs. 2, 1 hr.; required; fee $1.00 each quarter.

11a, 11b, 11c. **Physical Training.** Advanced Work. Prerequisite 10c. Fall, Winter, and Spring respectively. Lab. 1, 1 hr.; required; fee $1.00 each quarter.

PUBLIC SPEAKING

PROFESSOR SHATTUCK, Central Building, Room 311½

30. **Extempore Speech.** The fundamental principles of speech organizatin and delivery. Fall, Winter, or Spring. Rec. 2 or 3; credit 2 or 3.

ZOOLOGY AND ENTOMOLOGY

PROFESSOR BALL, Science Building, Room 313

1a, 1b, 1c. **General Zoology.** A general survey of the animal kingdom together with a discussion of the more important biological laws.

C. For students in Veterinary Medicine. Emphasis laid on the principles of development. (1aC) Fall. Rec. 2; lab. 1, 3 hr.; credit 3; fee $2.00. (1bC) Winter. Rec. 2; lab. 1, 2 hr.; credit 2⅔; fee $2.00.

202. **Embryology.** (Veterinary students.) Vertebrate development, mainly bird and mammal. Emphasis on histogenesis, mammalian development and fetal membranes. Prerequisite, General zoology. Spring. Lect. 2; lab. 1, 3 hr.; credit 3; fee $2.50.

General Information

ADMINISTRATION

The laws of the United States and State of Iowa provide for the scope and the management of the State College of Agriculture and Mechanic Arts. It is under the State Board of Education, which consists of nine men nominated by the Governor and confirmed by the Senate. This Board appoints a finance committee consisting of three men who give their entire time to the management of the four state educational institutions of Iowa, of which the Board is in charge, under provision of the law and such rules and regulations as the State Board of Education may prescribe.

GOVERNMENT

The character of the College buildings and the nature of the work make order, punctuality, and systematic effort indispensable. The institution offers no inducement to the idler or the self-indulgent. All who are too independent to submit to needful authority, too reckless to accept wholesome restraint, or too careless to take advantage of their opportunities, are advised not to come. The discipline of the College is confined mainly to sending away those who prove, on fair trial, to be of this class. The final decision of all cases of discipline rests with the President of the College except when he delegates such power in particular cases to the deans or to some one of the standing committees of the faculty.

HISTORY

An act establishing "A State Agricultural College and Model Farm" to be connected with the entire agricultural interests of the state was passed by the legislature of Iowa in 1858. This legislature also appointed a board of commissioners to buy a farm and erect a college building, and selected a board of trustees to secure a faculty and organize a college. In 1859 a farm of six hundred and forty acres situated near Ames, was purchased.

In 1862 Congress enacted, and President Lincoln signed a bill entitled, "An act donating public lands to the several States and Territories, which may provide colleges for the benefit of Agriculture and the Mechanic Arts."

Section 1 of this act provides that for the support of such colleges there be granted "an amount of public land, to be apportioned to each State in quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of 1860."

Section 4 requires: "That all moneys derived from the sale of land shall constitute a perpetual fund, the capital of which shall remain forever undiminished, and the interest of which shall inviolably be apportioned by each State which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college, where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislature

of the State may provide, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The General Assembly of Iowa, September 11, 1862, accepted the grant upon the conditions and under the restrictions contained in the act of Congress, and by so doing entered into contract with the General Government to erect and keep in repair all buildings necessary for the use of the College. By action of the General Assembly the College was changed from an agricultural institution into a College of Agriculture and Mechanic Arts with the broad and liberal course of study outlined in the following paragraph. The College was formally opened on the seventeenth day of March 1869.

In 1884 the General Assembly passed an act defining the course of study to be pursued, as follows: "Section 1. That Section 1621 of the Code is hereby repealed and the following is enacted in lieu thereof: 'Section 1621. There shall be adopted and taught in the State Agricultural College, a broad, liberal, and practical course of study, in which the leading branches of learning shall relate to agriculture and the mechanic arts and which shall also embrace such other branches of learning as will most practically and liberally educate the agricultural and industrial classes in the several pursuits and professions of life, including military tactics. Section 2. That all acts and parts of acts inconsistent with this act are hereby repealed'."

August thirtieth the following act was approved by President Harrison: "Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, that there shall be and hereby is, annually appropriated, out of any moneys in the treasury not otherwise appropriated, arising from the sales of public lands, to be paid, as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may hereafter be established, in accordance with an act of Congress approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic sciences, with especial reference to their application in the industries of life, and to facilities for such instruction."

The income of the College from national and state sources is therefore expended in instruction, experimentation, and illustration in agriculture and in the mechanic arts, and in the underlying and related sciences and literature. All buildings are erected and all repairs thereon are made by the State of Iowa.

The college property is valued at $4,846,716.11.

LOCATION

The College occupies a delightful and healthful location upon high, rolling land in the west part of Ames, Story County. Situated at the junction of the north and south branch and the main double-track line of the Chicago & Northwestern Railroad, and connected with all the trunk lines of Iowa, Ames is easily accessible from all parts of the state. An electric railway connects Ames and the College. The Fort Dodge, Des Moines and Southern Railway (electric) with stations on the campus, gives efficient service to the College and connections with the following trunk

lines: At Fort Dodge, with the Illinois Central and Chicago-Great Western; at Huxley, with the Chicago, Milwaukee & St. Paul; at Des Moines, with the Chicago, Rock Island & Pacific, the Chicago-Great Western, and the Chicago, Burlington & Quincy.

Ames is a most desirable town for wholesome college influences. Its people are thrifty, enterprising, and cordial. The town has an excellent system of public schools, numerous churches, waterworks, and electric lights, and it also has a good city government. It is an inviting community for heads of families who wish to educate their children and enjoy a good environment at a reasonable expense. Ames and the College are on very cordial terms, and the citizens of Ames seek to promote the efforts of the students and the highest interests of the College.

GROUNDS

Of the entire College domain of 1,537 acres, 125 acres are set apart for College grounds. These include the experimental plots, the young forestry plantations, the surroundings of professors' dwellings, and the central campus with its beautiful walks and drives, its trees, shrubbery, and flower gardens, and its large and stately buildings. The true principles of landscape gardening have been so faithfully observed in the gardening and in the location of buildings and drives as to make the entire campus a large and beautiful park.

BUILDINGS

Fifty-five commodious buildings besides the dwelling houses and the buildings for farm stock, machinery, and work, have been erected by the State for the exclusive use of the various departments of the College. All of these buildings are heated by steam, lighted by electricity, and supplied with pure water.

The map in the front of this catalog gives a list of the buildings and their location on the campus.

The following is a summary of the property, including the buildings belonging to the College:

Inventory for July 1, 1920

Real Estate	$ 306,463.50
Buildings	2,907,985.88
General Equipment	361,614.14
Equipment:	
College Departments	758,359.00
Two-year Departments	22,108.50
Experiment Stations	61,299.73
Furniture:	
College Departments	254,163.78
Two-year Departments	6,894.64
Experiment Stations	8,356.66
Supplies:	
College Departments	124,626.17
Two-year Departments	2,511.12
Experiment Stations	32,332.99
	$4,846,716.11

EMPLOYMENT FOR STUDENTS

Although this institution is not situated in a large center where there is an unlimited amount of employment for students, yet there are a large number who can earn a part of their expenses here at College. Very few are able to make all their expenses, and no young man should come expecting to do this unless he has made definite arrangements previous to his coming.

The work available for students consists of employment in the various departments, such as office work, caring for stock, helping in dairy, greenhouses, orchards, shops, or janitor work about the buildings. Considerable work for students is also obtained in the business houses and homes of Ames; a limited number find employment in student clubs and in the cafeteria.

The Employment Bureaus are managed as follows: For men, by the Young Men's Christian Association. Regular work for women, Miss Harwood, Adviser to women; odd hour jobs for women, the Young Women's Christian Association. The heads of various departments are able to secure employment for large numbers of students during the summer vacation. Such positions give the students practical work that is closely related to the instruction given in college, and thereby strengthens them for service after graduation.

During the present year several hundred students have found work through the Association Employment Bureaus. It is suggested that, on account of the heavy laboratory work required in the courses here, students should not come expecting to put in too much time in labor. Facts regarding opportunity for work at the College can be had by writing Secretary, Y. M. C. A., or Secretary, Y. W. C. A., or Miss Hazel Harwood.

Manual Labor

The following regulations in regard to manual labor have been adopted by the Board of Education.

1. The manual labor of students is divided into two kinds: uninstructive labor, which shall be paid for in money; and instructive labor, which shall be compensated by the instruction given and the skill acquired.

2. Uninstructive labor shall comprise all the operations in the workshop, the garden, upon the farm, and elsewhere, in which the work done accrues to the benefit of the College, and not to that of the student. Instructive labor shall embrace all those operations in the workshop, museum, laboratories, veterinary hospital, experimental kitchen, gardens, experimental stations, and on the farm,—labor in which the sole purpose is the acquisition of knowledge and skill.

3. Students shall engage in instructive labor in the presence of the professor in charge, and under his instruction according to the statement made in each of the courses of study.

The compensated labor furnished by the divisions of Agriculture, of Veterinary Medicine, and of Engineering, is given by each to its own students and is eagerly sought. Compensated labor is awarded to the most faithful and meritorious students in each department. This labor is paid for according to its value to the College, but no student should expect to pay the main part of his expenses by labor while here. The College cannot furnish the work, and, even if it could, the student's time is *needed chiefly for study*. Still, many worthy and industrious students pay a considerable part of their expenses by labor; over $25,000 is paid out by the College thus each year to students and graduate assistants.

HOSPITAL

Sanitary conditions surrounding the College are excellent. The buildings are situated on high ground with good natural drainage. The water supply is exceptionally pure and abundant. The sewer system and sewage disposal plant are the best that modern sanitary engineering can devise. Nevertheless in this, as in other like institutions, where students are drawn from a wide territory, various diseases are brought by the students themselves. In order to control epidemics and properly to care for other cases of illness or injury, a hospital is provided. A new hospital of 45 beds capacity with a large dispensatory and all modern conveniences has been constructed. In connection with this is the old hospital of 18 beds for special cases. This hospital is under the charge of the Department of Hygiene. There are three physicians, six registered nurses, a competent housekeeper and helper, and two student hospital assistants.

The expenses of the hospital are defrayed from a fund accruing from the fees paid by students. The privileges of the hospital are extended to all students who pay the full incidental fee of $6.00 or more per quarter, provided that the physician shall be paid for calls at their residences. Persons not making the deposit will be admitted to the hospital upon the basis of a charge of $21.00 a week, within the discretion of the College physicians. All students who pay the full regular fee are insured medical attendance, nursing, and medicine, in illness or accident; and consultation and medicine for minor ailments in accordance with the regulations herein published. The charges named are based upon the probable actual cost of medical attention and hospital service, and the fund created is carefully devoted to these purposes. The College cannot assume any liability beyond the extent of the fund so created. The hospital has proved to be a great blessing to the students.

The following regulations apply to the privileges of the hospital:

1. Students entering the hospital shall be charged $8.50 a week ($1.25 per day) for board, room, light, and heat. But for any time in excess of three consecutive weeks spent in the hospital, a charge shall be made of $1.50 per day.

2. In case a special nurse or physician is employed, the expense shall be borne by the particular patient, the selection of such nurse or physician to be approved by the President of the College and the College Physicians.

3. The College assumes no responsibility whatever in case of smallpox; nor shall the privileges of the hospital be extended to such cases.

4. The President and the College Physicians may require of students entering the College a certificate of a reputable physician showing successful vaccination. On account of prevalence of smallpox in some localities in the United States, it is strongly urged that all students entering Iowa State College be vaccinated before leaving home. This is recommended in order that valuable time may not be lost during the college year by the necessity of being vaccinated.

5. The College physicians are authorized to exclude from the College dormitories and recitation rooms any person afflicted with a contagious disease.

ALUMNI ASSOCIATION

The Alumni Association of the Iowa State College was organized in 1876. Its purpose is to promote the highest interests of the institution and to increase friendship and sympathy among students and alumni.

The present officers of the association are:

President, M. J. Riggs, '83, Toledo, Ohio.

Vice-President, Mark G. Thornburg, '10, Emmetsburg, Iowa.

Recording Secretary, Katherine (Goble) Gray, '99, Ames, Iowa.
Treasurer, Herman Knapp, '83, Ames, Iowa.
General Secretary, Ward M. Jones, '97, Ames, Iowa.

The annual meeting and banquet is held commencement week. A local association was organized at Ames in April, 1903, in order to arrange the annual meetings and to keep the local alumni in touch with one another.

Active local branches of the general association exist in Southern and Northern California, Washington, D. C., Pittsburgh, Chicago, St. Louis, Seattle, Minneapolis and St. Paul, Omaha, New York City, Kansas City, Detroit, Spokane, and Oklahoma City; in the state, at Des Moines, Sioux City, Davenport, Waterloo, and in several counties.

The Alumnus, the official organ of the association, appears monthly except in August and September. It is under the supervision of the general secretary.

The offices of the association are on the second floor of Alumni Hall, where all alumni and ex-students will find a hearty welcome.

STUDENT PUBLICATIONS

The Iowa State Student is a tri-weekly newspaper published by a staff appointed from the student body and devoted to the news of the College.

The Iowa Agriculturist is an agricultural monthly magazine published by the students of the Agricultural Division, in coöperation with the Department of Agricultural Journalism.

The Iowa Engineer is published monthly by the students of the Engineering Division.

The Iowa Home Maker is a home magazine published monthly by the students of the Home Economics Division.

The Bomb is an annual published by the Junior class.

PUBLIC SPEAKING COUNCIL

The Public Speaking Council is an organization composed of three faculty members recommended by the President of the College and appointed by the Board of Education; and one representative from each of the ten literary societies, the sophomore, the junior, and senior classes, and the Dramatic Club. The Council promotes and manages all dramatic and public speaking activities at Iowa State College. These activities include intersociety and intercollegiate debates, dramatic, oratorical, and extempore speaking contests, joint literary society programs, literary society graduation exercises, and all class plays.

Teams of three members from each of the societies meet in two series of debates during the fall quarter. In the spring the successive winners meet in the semi-final and final debates for the Kennedy cup. The final winners are awarded the cup for one year, and the name of their society is inscribed upon it. This series of debates offers excellent training for the inter-collegiate debates. Iowa State College is a member of three debating leagues. In the fall two debating teams of three students meet Kansas Agricultural College; in the spring, Purdue University, Michigan Agricultural College, Wisconsin, and Minnesota.

There is a growing interest in extemporaneous speaking in Iowa State College. The members of the faculty have donated to the Council a trophy to be awarded annually to the winner of the extempore speaking contest.

The sophomore, junior, senior, inter-literary society, and dramatic club plays offer training in dramatics to a great many students. The funds from these plays pay a large part of the expenses of public speaking events.

LITERARY SOCIETIES

The work of the ten literary societies serves not only to supplement the social and literary work of the College, but also to aid the student in securing that training so necessary to enable him to appear before an audience, that training which every student needs and which cannot be secured in the class room alone. Every student is invited, even urged, to join one of these societies.

LECTURES AND ADDRESSES

The following speakers addressed the students of the College during the calendar year 1920:

January 12—Mr. O. O. Stanchfield, International Y. M. C. A. Secretary for India, "The Agricultural Needs and Possibilities of India."

January 12—Rabbi Emanuel Sternheim of Sioux City, "Some Perils of Our Present Day Civilization."

January 26—President James L. McConaughey, Knox College, "Kipling, the American."

January 30—President James A Burns, Oneida Institute, Ky., "The Passing of Feudism Among the Mountain Whites."

February 3—Miss Ruby Ferguson, Women's College, Montgomery, Ala., Dramatic Readings.

February 16—Frederick Monsen, Pasedena, Calif., "The Truth About Mexico."

February 20—W. W. Ellsworth, New York City, "All the Monthly Magazines."

February 24—Alexander Watson, English Dramatic Reader, Readings from Barrie and Kipling.

February 27—C. G. Sargent, Colo. State College, "Passing of the Little Red Schoolhouse."

March 1—Professor C. L. Fitch, Extension Department, "French Life and Agriculture."

March 12—Dr. Charles H. Judd, University of Chicago, "Improvement of College Instruction."

March 29—Edgar C. Raine, Seattle, Washington, "Alaska."

April 1—Ellis Parker Butler, "Laughs is Laughs."

April 5—Professor Hardin Craig, State University of Iowa, "The Vitality of an Old Classic."

April 8—Charles C. Nutting, State University of Iowa, "Explorations in Central America."

April 9—Fred B. Smith, New York City, "The New Patriotism."

April 9—Miss Hortense Neilson, Reading, Maeterlinck's "Monna Vanna."

April 10—Fred B. Smith, New York City, "America's Greatest Sin."

April 15—Mrs. Collingwood Tucker, Keokuk, "Songs of the Old South."

April 16—Lorado Taft, Chicago, Ill., illustrated art lecture, "A Glimpse of a Sculptor's Studio."

April 20—Miss Flora Dunlap, Des Moines, Iowa, "College Debts."

April 21—Mr. Albert E. Roberts, International Rural Secretary for Y. M. C. A., "The Regeneration of Rural Life."

April 22—Coningsby Dawson, English Novelist and Soldier, "Remaking the World After the Test of Scarlet."

April 26—Countess Turczynowicz of Lithuania, "Barriers Aagainst Bolshevism."

April 29—Professor R. D. Hollister, University of Michigan, Reading of "Macbeth."

May 10—Carl Schmolke, of South Africa, "South Africa and the Boers."

May 13—C. E. Seashore, State University of Iowa, "Analysis of Musical Talent."

May 26—Miss Helen M. Bennett, Chicago, Ill., "New Occupations for Women and Principles of Success."

May 27—Miss Helen M. Bennett, Chicago, Ill., "Efficient Efficiency."

June 6—Dr. E. D. Burton, University of Chicago, Baccalaureate Sermon.

June 6—Hon. Chas. H. Sloan, Member of Congress from Nebraska, Address.

June 7—David Starr Jordan, California, Ex-President Leland Stanford Jr. University, "A Generous Education the Birthright of Every Child in the Republic."

June 7—Professor Benjamin H. Hibbard, University of Wisconsin, "The Cost of Marketing Farm Products."

June 7—H. C. Taylor, Department of Agriculture, Washington, D. C., "Economics and Cost of Productions."

June 7—Dean Eugene Davenport, Founders' Day Address, "The Land Grant College, a Public Service Institution."

June 8—Alonzo Englebrecht Taylor, "The Menace of Underproduction."

June 9—Dr. Marion L. Burton, University of Minnesota, Commencement Address, "The Demands of Democracy."

October 20—Miss Katherine Raynolds McCormick, "Armenia: Its Place in Christian Civilization and Its Appeal Thereto."

October 26—Edward Abner Thompson, of Boston, Dramatic Reading, "Disraeli."

October 29—Hamlin Garland, New York City, "Songs and Seasons of the Old-Time Middle Border."

November 12—Professor Walter Scott Perry, Pratt Institute, Brooklyn, "Japan: the Art of a Remarkable People."

November 12—Professor Walter Scott Perry, Pratt Institute, Brooklyn, "India: its picturesque life."

November 23—Dr. H. L. Reitz, State University of Iowa, "Contributions to the Theory of Correlation, with Applications to Various Scientific Problems."

November 26—Professor D. W. Morehouse, Drake University, "Some Modern Aspects of Astronomy."

November 30—Dr. Gregory Zilboorg, Member of Kerenski's Cabinet, Russia, "The Background of Present Day Russia."

December 3—Professor Frederick Starr, University of Chicago, "Present Day Japan."

December 7—Gov. Henry J. Allen of Kansas, "The Kansas Court of Industrial Relations."

December 10—Margaret Deland, Boston, Mass., "The Opportunity of the Dull Job."

RELIGIOUS LIFE AT THE COLLEGE

Orange Howard Cessna, Chaplain
Fred C. Hansen, General Secretary, Y. M. C. A.
Angelina McKinley, General Secretary, Y. W. C. A.

The college life is permeated with religious influences. The following are among the more evident moral and religious forces in operation throughout the year:

1. **The Sunday Morning Chapel Services** are held in Agricultural Hall auditorium and are addressed by prominent clergymen of all denominations who accept special invitations to come to the College for this purpose. These services are well attended. Often the hall is filled to its capacity of nearly 900. An attractive feature is the music furnished by a choir of college students.

2. **The Y. M. C. A. and the Y. W. C. A.** are quartered in Alumni Hall on the campus and have regular secretaries. Last year over 85% of the young women students belonged to their association. The associations conduct Bible classes in sororities, fraternities, and boarding houses. These classes are well attended. Special religious services are held under the direction of prominent Association leaders.

There are in active operation a Luther League, Brotherhood of St. Andrew, Epworth League, Baptist Young People's Union, Christian Endeavor Societies, and a Catholic Students' Association.

3. **College Pastors.** Four churches now maintain college pastors at Ames, the Methodist, the Presbyterian, the Congregational, and Episcopal. These men work in conjunction with their churches and with the religious organizations on the campus. They are exerting a helpful influence.

4. There are ten different **denominational churches** in Ames, all of which are in touch with the students, who are cordially invited to take part in all religious services.

Geneva Scholarship

The Faculty Women's Club contributes $35 towards the expenses of a delegate to the Y. W. C. A. Central Student Conference at Lake Geneva. This fund is awarded the third quarter of the Sophomore year by a committee from the club. Scholarship, accomplishment in Y. W. C. A. work, interest in general college activities, and personality are the points considered in making the award.

LIBRARY REGULATIONS

The general library is primarily for free reference use; any student or citizen of the state may use the books in the reading rooms. The privilege of drawing books for use outside the building is accorded to all members of the instruction force, to all registered students, and to other accredited persons. Books in the general library not reserved for classes may be borrowed for home use for two weeks and may be renewed for two weeks more if not specially restricted or called for. All books are subject to recall any time when needed for college work.

General reference books, all general periodicals, and certain other groups of books are to be consulted in the reading rooms only.

Books from the stacks which are not returned on time are subject to a fine of 10c a day after notice has been sent that the book is due. Books from the Reserve shelves are subject to a fine of 50c for each hour kept overtime.

Books recalled for college work must be returned at once upon receipt

of the notice. If not returned within two days after the notice is mailed a fine of 25c a day is charged. All books lost or damaged must be paid for. Books not at the time needed at the college, or not subject to special restrictions, may be loaned for a limited period to other libraries or to alumni of the college.

Hours for Opening. The general library is open week days during the general sessions of the college from 7:50 a. m. to 9:30 p. m., and on Sundays from 2 p. m. to 5 p. m. During the Summer Session the library is open from 8 a. m. to 6 p. m., and 7 to 9 p. m., but is not open on Sundays. During the summer vacation the library is open from 9-12 a. m. and from 1-4 p. m.

Permits may be given to members of the faculty for use at other times. The library is regularly closed on New Years, Independence, Thanksgiving, and Christmas days. The hours of opening of the department libraries differ somewhat from those given above.

Report of Cases Treated by Hospital Clinic Division of Veterinary Medicine Iowa State College

From January 1, 1920, to December 31, 1920.

	Horses & Mules	Cattle	Swine	Dogs	Sheep	Fowls	Cats	Total
Abscess	7	3	7	1		1		19
Amputation—Tail	1			2				3
Anaesthesia								
1. Local	33	1	4					38
2. General	12	1	59	41	2		6	121
Anemia					1			1
Ascaridae			36	9				45
Balanitis	1							1
Caudal Myotomy	1							1
Cholera (Fowl)						15		15
Chorea	1							1
Coxitis Chronica	1							1
Caesarean Section			9					9
Choke	1							1
Contusions	7							7
Castration	22	3	36	1			1	63
Cryptorchids	2		4					6
Coccidiosis						3		3
Distemper (Canine)				1				1
Digestive Disturbance	13	5	4	12		2	2	38
Dentigerous Cyst	1							1
Dislocation-coxo-femoral			1					1
Dehorning		1						1
Dystocia		1	10					11
Eye								
1. Periodic Ophthalmia	7							7
2. Keratitis	3	1		2				6
3. Conjunctivitis	2			1				3
4. Luxation eyeball				1				1
Eclampsia				1				1
Eczema	3			4				7
Ear								
1. Trimmed				1				1
2. Otitis Ext.	1			1			1	3
Empyema Frontal Sinus	2	1						3
Enteritis	1		4					5
Enterectomy			1					1
Fracture								
1. Vertebra				1				1
2. Radius				2				2
3. Humerus				1				1
4. Tibia	1	1						2
5. Scapula	1							1
6. Facial bones	1							1
7. Metatarsus							1	1
Fistula								
1. Tail			1					1
2. Withers	23							23
Foreign Body—mouth	1							1
Glanders test	9							9
Gonitis	2							2
Goitre					1			1
Hematona	4		1			1		6
Hydrocele	1							11

Hernia								
1. Umbilical	1		24					25
2. Inguinal	2		31		2			35
3. Ventral		1	3					4
Health Certificate	4	1	13		5			23
Hog Cholera								
1. Vaccination			176					176
2. Autopsy			13					13
Hemorrhagic Septicemia								
1. Autopsy		4	3		6			13
2. Vaccinated		124			111			235
Influenza	20							20
Johne's Disease		1						1
Lung Worm					126			126
Lymphingitis	1							1
Lice infestation	2	5						7
Laryngeal Hemiphegia	2							2
Mange								
1. Demodex				1				1
2. Sarcoptic			1					1
Mastitis		1			1			2
Metritis	4	9	1	1				15
Oophorectomy	2			36			3	41
Orchitis		1						1
Patella—luxation of	1							1
Paraplegia			1					1
Pervious Urachus	3							3
Pneumonia		3	4	1	1			9
Pododermatitis, suppurative	6							6
Poll Evil	4							4
Prolapse								
1. Rectum			4					4
2. Omentum	1							1
3. Vagina					1			1
Quittor	1							1
Rabies			2					2
Rachitis			4					4
Ring Bone	8							8
Rumenotomy		1						1
Rheumatism					1	1		2
Sclerostomiasis	12							12
Scirrhous cords		1	11					12
Septicemia			3					3
Sore Neck (sit fast)	4							4
Seroma	2							2
Shoulder Tumor	5							5
Soundness Examination	53							53
Spavin	4							4
Sterility	4	20	2					26
Stomach worm					100			100
Strangles	1							1
Sweeney	6							6
Stringhalt (chorea)	1							1
Teeth								
1. Enamel points	77							77
2. Alveolar periostitis	18							18
3. Long teeth	11							11
4. Supernumerary	5							5
5. Shear mouth	2							2
6. Odontoma	1							1
Thrush	2							2
Tumors								
1. Carcinoma	1	2						3
2. Fibroma	4	1						5
3. Sarcoma	1					1		2
(a) Lympho sarcoma	1							1
(b) Fibro sarcoma	3							3
(c) Melano sarcoma	2							2
4. Osteoma	1							1
5. Actinomycotic		1	1					2
Tendinitis	3							3
Tuberculin test		148	13		*1			162
Wounds	31		3	3			1	38
TOTAL	482	342	490	124	359	24	15	1,836
Number of cases counted twice	45	2	63	41	2		**6	159

* One goat.
** Four skunks.

SUMMARY OF EXAMINATIONS MADE BY DEPARTMENT OF PATHOLOGY, DIVISION OF VETERINARY MEDICINE, IOWA STATE COLLEGE

From January 1, 1920, to January 1, 1921.

A.	Autopsies		
	Horses	11	
	Cattle	17	
	Sheep	24	
	Swine	64	
	Dogs	13	
	Cats	3	
	Poultry	45	
	Rabbits	2	
	Total Autopsies		179
B.	Histopathologic		
	Number of animals	104	
	Number of tissues		204
C.	Bacteriologic		58
D.	Parasitologic		
	Number of animals	36	
	Parasite species		59
E.	Meat Inspections		
	Cattle	20	
	Sheep	47	
	Swine	92	
	Total inspections		168

Note:—The above autopsies include clinic cases brought in for autopsy; also animals that die or are destroyed.

Meat inspections are made on all animals slaughtered in the Animal Husbandry abbatoir.

Report of Cases Visited by Ambulatory Clinic Division of Veterinary Medicine Iowa State College

From January 1, 1920, to December 31, 1920.

Return calls are not enumerated in this report.

	Horses & Mules	Cattle	Sheep	Swine	Chickens	Dogs
A. INFECTIOUS DISEASES						
Influenza	6					
Distemper	2					
Purpura Hemorrhagica	2					
Navel Ill	7					
Hog Cholera and Vacc. for same				6610		
Chicken Cholera					400	
Hemorrhagic Septicemia and Vaccination		144	542	285		
Blackleg and Vaccination		31				
Tetanus				1		
Malignant Edema	1					
Infectious Keratitis		14				
Rabies	1					1
Broncho Pneumonia				210		
Infectious Enteritis				390		
B. DISEASE OF RESPIRATORY ORGANS						
Pneumonia	1	3				
Edema of the Glottis		1				
Emphysema	1					
Congestion of Lungs	1					
Laryngitis				1		
C. DISEASE OF DIGESTIVE SYSTEM						
Ascariasis				1125		
Acute Indigestion	11					
Chronic Indigestion	1			1		
Gastro Intestinal Catarrh	112					
Impaction	14					
Intestinal twist	1					
Rupture of Stomach	1					
Oesophageal Choke		1				
Traumatic Indigestion		2				
Sclerostomiasis	31					
Acute Dilatation of Stomach	1					
Enteritis		2				
Gastric tympany		7				
Intestinal tympany	12					
Atony of the Rumen		9				
Impaction of Rumen		13				
D. DISEASES OF NERVOUS SYSTEM						
Encephalitis	1					
Radial-paralysis	1					
Axillary paralysis	1					
Lumbar paralysis				4		
Facial paralysis	1					
Parturient paresis		7				
Congestion of brain	2					
Crural paralysis	2					
Suprascapular paralysis	8					
E. DISEASES OF CIRCULATORY SYSTEM						
Traumatic Pericarditis		2				
Septicemia		4				
Toxemia		1				
Pyemia		1				

F. DISEASES OF EYE							
Keratitis	2						
Conjunctivitis	1						
Periodic Ophthalmia	1						
Contusion of Eye		1					
G. MISCELLANEOUS							
Azoturia	7						
Castration	14	11	8	10			
Epistaxis	1						
Emphysema Gutteral pouch	1						
Edema abdominal wall	1						
Forage Poison	9						
Parturient Laminitis	4						
Mallein test	5						
Examination for pregnancy		67					
Rheumatism				1			
Examination for soundness	2						
Spasm of Diaphragm and Palpitation of Heart	6						
T. B. test		40					
Subcutaneous Emphysema		2					
Peritonitis	1						
H. GENITO URINARY TRACT							
Prolapse of Uterus				1			
Prolapse of Vagina		1	1				
Dystokia	4	9	1	10			
Caesarian		1		7			
Retained Placenta	4	45					
Catarrhal Metritis		22					
Purulent Metritis		9					
Purulent Mastitis		1					
Abrasion of Vagina		1					
Sterility Examination	1	19					
Mastitis		27					
Pervius Urachus	11						
Retention Cyst of Uterus		1					
I. SURGICAL DISEASES							
1. Mouth							
Enamel points	4						
2. Neck							
Tracheotomy		1					
3. Abdomen							
Abscess, flank		2					
Rumenotomy		1					
Fracture, rib	1						
Rupture, prepubic tendon	1						
Ventral Hernia				5			
4. Fore Limb							
Abscess, shoulder	2						
Seroma, shoulder	4						
Inter-tubercular Bursitis	2						
Tendo Vaginitis	1						
Sprain, fetlock	1						
Pododermatitis	3						
Suppurative Pododermatitis	3	1					
Laminitis, acute	5						
Nail puncture, foot	7						
Suppurative cellulitis		1					
Occult Lameness	3						
Polyarthritis		1					
Wire cuts	5						
J. HIND LIMB							
Wire cuts	8	2					
Lacerated wounds	2						
Tarsitis, general	1						
K. POST MORTEM							
Intestinal twist	1						
Hog cholera				30			
Impaction, large intestine	1						
Traumatic Indigestion		1					
Enteritis		2	5				
Tuberculosis		1					
Traumatic Pericarditis		1					
Pneumonia				1			
Bronchitis				1			
	352	513	557	8693	400	1	
Total Number of cases							10516

9sa Zv
1922/23

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS OFFICIAL PUBLICATION

ANNOUNCEMENT

DIVISION OF VETERINARY MEDICINE
1922-1923

JAN 8 1931

VOL. XX NO. 36 FEBRUARY 1, 1922 AMES, IOWA

The College

The Iowa State College of Agriculture and Mechanic Arts conducts work in five major lines:

AGRICULTURE
ENGINEERING
HOME ECONOMICS
INDUSTRIAL SCIENCE
VETERINARY MEDICINE

The Graduate College conducts advanced research and gives instruction in all these five lines.

Four-year, five-year, and six-year collegiate courses are offered in different divisions of the College. Non-collegiate courses are offered in agriculture, home economics, and trades and industries. Summer Sessions include graduate, collegiate, and non-collegiate work. Short courses are offered in the winter.

Extension courses are conducted at various points throughout the state.

Research work is conducted in the Agricultural and Engineering Experiment Stations and in the Veterinary Research Laboratory.

Special announcements of the different branches of the work are supplied, free of charge, on application.

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Iowa State College, Ames, Iowa.

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS OFFICIAL PUBLICATION

DIVISION OF VETERINARY MEDICINE
1922—1923

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VOL. XX NO. 36, FEBRUARY 1, 1922 AMES, IOWA

AMES, IOWA

Published weekly by the Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa. Entered as second-class matter and accepted for mailing at special rate of postage provided for in Section 429, P. L. & R., Act August 24, 1912, authorized April 12, 1920

CALENDAR

1922

JANUARY

S	M	T	W	T	F	S
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29	30	31				

FEBRUARY

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MARCH

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JUNE

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OCTOBER

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DECEMBER

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1923

JANUARY

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FEBRUARY

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MARCH

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APRIL

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MAY

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27	28	29	30	31		

JUNE

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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

College Calendar
1922-1923

The General College Faculty meets on the third Monday of each month at 4:15 P. M. in Engineering Hall. The faculties of the different divisions meet each month as follows:

First Monday, 4:15 P. M.----------Home Economics
Tuesday, following first Monday, 4:15 P. M.----------Veterinary Medicine
Wednesday, following first Monday, 4:15 P. M.----------Engineering
Thursday, following first Monday, 4:15 P. M.----------Agriculture
Second Monday, 4:15 P. M.----------Industrial Science
Second Tuesday, 4:15 P. M.----------Non-Collegiate

This calendar is subject to change at any time.

1922

SUMMER SESSION

First Term

June 10, 12, Saturday and Monday	Registration-Classification.
July 21, Friday	First Term Closes.

Second Term

July 21, 22, Friday, Saturday	Registration-Classification.
August 31, Thursday	Second Term Closes.

FALL QUARTER

September 21-22, Thursday and Friday, 8:00 A. M.	Entrance Examinations.
September 25-26, Monday, 8:00 A. M., to Tuesday, 5:00 P. M.	Registration-Classification.
September 27, Wednesday, 8:00 A. M.	Class Work Begins.
November 11, Saturday, 10:30 A. M.	Armistice Day, Special Exercises.
November 29-30, Wednesday, 6:00 P. M. to Thursday, 8:00 P. M.	Thanksgiving Day.
December 21, Thursday, 11:00 A. M.	Fall Quarter Closes.

1923

WINTER QUARTER

January 2, Tuesday, 8:00 A. M. to 5:00 P. M.	Registration-Classification.
January 3, Wednesday, 8:00 A. M.	Class Work Begins.
January 29, Monday, to February 3, Saturday	Agricultural Short Course and Convention Week.
March 21, Wednesday, 11:00 A. M.	Winter Quarter Closes.

SPRING QUARTER

March 26, Monday, 8:00 A. M. to 5:00 P. M.	Registration-Classification.
March 27, Tuesday, 8:00 A. M.	Class Work Begins.
May 30, Wednesday, 10:30 A. M.	Memorial Day, Special Exercises.
June 6, Wednesday, 4:00 P. M	Senior Work Closes.
June 8, Friday, 4:00 P. M.	Class Work Closes.
June 8, Friday, 8:00 P. M.	Senior Promenade.
June 9, Saturday	Alumni Day.
June 10, Sunday, 10:30 A. M.	Baccalaureate Sermon.
June 11, Monday, 10:30 A. M.	Commencement.
June 11, Monday, 2:30 P. M.	President's Reception.

SUMMER SESSION 1923

First Term

June 9, 11, Saturday and Monday	Registration-Classification.
June 12, Tuesday, 7:00 A. M.	Class Work Begins.
July 20, Friday, 4:00 P. M.	First Term Closes.

Second Term

July 20, 21, Friday and Saturday	Registration-Classification.
July 23, Monday, 7:00 A. M.	Class Work Begins.
August 31, Friday, 4:00 P. M.	Second Term Closes.

FALL QUARTER 1923

September 20-21, Thursday and Friday, 8:00 A. M.	Entrance Examinations.
September 24-25, Monday, 8:00 A. M. to Tuesday, 5:00 P. M.	Registration-Classification.

SPECIAL EVENTS 1922-1923

FALL QUARTER

September 30, Saturday afternoon	Push Ball Contest.
September 30, Saturday, 8:00 P. M.	Y. W. C. A. and Y. M. C. A. Reception.
October 7, Saturday, 8:00-11:30 P. M.	Agricultural Reception.
October 13, Friday, 4:00-10:00 P. M.	Engineering Campfire.
October 14, Saturday, 8:00 P. M.	Sophomore-Freshman Annual.
October 27, Friday, 4:00-11:00 P. M.	Industrial Science Hallowe'en Party.
November 3, Friday, 7:30-10:00 P. M.	Little International.
December 2, Saturday, 8:00 P. M.	Junior Trot.

SPRING QUARTER

May 4, Friday, 4:00-11:30 P. M.	Industrial Science Barbecue.
May 5, Saturday, 8:00 P. M.	Military Ball.
May 18, Friday, 4:00 P. M.	May Day Fete.
May 19, Saturday, 8:00 P. M.	Freshman-Sophomore Annual.

Iowa State Board of Education

D. D. MURPHY, President ..... Elkader
W. H. GEMMILL, Secretary ..... Des Moines

MEMBERS OF BOARD

TERMS EXPIRE JULY 1, 1923

Geo. T. Baker ..... Davenport
Anna B. Lawther ..... Dubuque
Willard C. Stuckslager ..... Lisbon

TERMS EXPIRE JULY 1, 1925

P. K. Holbrook ..... Onawa
Chas. R. Brenton ..... Dallas Center
D. D. Murphy ..... Elkader

TERMS EXPIRE JULY 1, 1927

Chas. H. Thomas ..... Creston
Edw. P. Schoentgen ..... Council Bluffs
Pauline Lewelling Devitt ..... Oskaloosa

STANDING COMMITTEES

Faculty Committee—D. D. Murphy, P. K. Holbrook, W. C. Stuckslager, Chas. H. Thomas, Miss Anna B. Lawther.
Building and Business Committe—Chas. R. Brenton, D. D. Murphy, Edw. P. Schoentgen, Geo. T. Baker, Mrs. Pauline Lewelling Devitt.

FINANCE COMMITTEE

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Thos. Lambert ..... Sabula
W. H. Gemmill, Secretary ..... Des Moines

BOARD ON SECONDARY SCHOOL RELATIONS

John E. Foster, Secretary ..... Des Moines

AUDITOR AND ACCOUNTANT

J. W. Bowdish ..... Des Moines

Officers of Administration

GENERAL OFFICERS

Raymond Allen Pearson, LL. D.—President
Room 104, Central Building.

Herman Knapp, B. S. A.—Business Manager and Treasurer
Room 122, Central Building.

Orange Howard Cessna, D. D.—Chaplain
Room 212, Central Building.

Thomas Sloss—Superintendent of Buildings and Grounds
Superintendent's Office.

James Franklin Edwards, M. D.—College Physician
College Hospital.

Edward M. Effler—Secretary and Auditor
Room 122, Central Building.

Gladys M. Rush, B. S.—Assistant Librarian
Room 112, Central Building.

George Platt Bowdish—Purchasing Agent
Room 124, Central Building.

James R. Sage, B. A., M. Sc.—Acting Registrar
Room 114, Central Building.

DEANS AND VICE DEANS

Charles Franklin Curtiss, D. S.—Dean of the Division of Agriculture
Room 124, Hall of Agriculture.

Anson Marston, C. E.—Dean of the Division of Engineering
Room 301, Engineering Hall.

Edna E. Walls, Ph. B., B. S.—Acting Dean of Home Economics
Room 106, Home Economics Building.

Samuel Walker Beyer, Ph. D.—Dean of the Division of Industrial Science
Room 299, Chemistry Building.

Charles Henry Stange, D. V. M.—Dean of the Division of Veterinary Medicine
Room 107, Veterinary Building.

Robert Earle Buchanan, Ph. D.—Dean of the Graduate College
Room 101, Science Building.

Maria M. Roberts, B. L.—Dean of the Junior College
Room 114, Central Building.

Hazel May Harwood, A. B., A. M.—Dean of Women
Room 103, Central Building.

Spencer Ambrose Beach, M. S.—Vice Dean of the Division of Agriculture
Room 201, Hall of Agriculture.

Harold Edward Bemis, D. V. M.—Vice Dean of the Division of Veterinary Medicine
Room 108, Veterinary Building.

James R. Sage, B. A., M. Sc.—Acting Vice Dean of Junior College
Room 114, Central Building.

*Officers of Instruction

Pearson, Raymond Allen, President, 1912.
B. S. in Agr., Cornell University, 1894; M. S. in Agr., 1899; LL. D., Alfred University, 1909; D. of Agr., University of Nebraska, 1917.

Stange, Charles Henry, Dean of the Division of Veterinary Medicine, Professor of Veterinary Medicine, 1909, 1907.
D. V. M., Iowa State College, 1907.

Bemis, Harold Edward, Vice Dean of the Division of Veterinary Medicine, Professor and Head of Veterinary Surgery, 1915, 1908.
D. V. M., Iowa State College, 1908.

Murphey, Howard Sylvester, Professor and Head of Veterinary Anatomy and Histology, 1913, 1909.
D. V. M., Ohio State College, 1908.

Bergman, Henry Dale, Professor and Head of Veterinary Physiology and Pharmacology, 1916, 1910.
D. V. M., Iowa State College, 1910.

Murray, Charles, Professor of Veterinary Investigation, 1917, 1908.
Ph. B., Drake University, 1906; B. S., Iowa State College, 1910; D. V. M., 1912.

Benbrook, Edward Antony, Professor and Head of Veterinary Pathology, 1919, 1918.
V. M. D., University of Pennsylvania, 1914.

Rice, Charles Dobbs, Associate Professor of Veterinary Pathology, 1917, 1913.
B. S., Georgetown College, 1902; D. V. M., Iowa State College, 1913.

Covault, Clarence Hartly, Associate Professor of Veterinary Medicine, 1917.
D. V. M., Ohio State University, 1911.

Guard, Willard F., Associate Professor of Veterinary Surgery, 1916, 1914.
D. V. M., Ohio State University, 1912.

Aitken, William Alexander, Veterinary Anatomy, 1920, 1919.
D. V. M., Iowa State College, 1917.

Walsh, Frank Edward, Veterinary Medicine, 1920, 1919.
D. V. M., Iowa State College, 1918.

McNutt, George, D. V. M., Veterinary Anatomy, 1919.

Dukes, Henry Hugh, B. S., D. V. M., Veterinary Physiology, 1921.

Jacobi, George Everette, D. V. M., Veterinary Pathology, 1921.

Anderson, D. F., Pharmacist, 1921, 1919.

Evans, George A., D. V. M., Veterinary Anatomy, 1921.

Judisch, George, Phar. D., Veterinary Pharmacology, 1912, 1901.

Yarborough, James Henry, B. S., Veterinary Physiology, 1920.

Renshaw, Solon B., 1st Lt. V. C., U. S. A.

Shearer, Phineas Stevens, Professor of Animal Husbandry, 1919, 1912.
B. S. in A. H., Iowa State College, 1912.

Anderson, Arthur Lawrence, Animal Husbandry, 1920.
B. S., University of Minnesota, 1916.

Brown, Frank Emerson, Associate Professor of Chemistry, 1918, 1917.
A. B., Kansas State Normal School; S. B., University of Chicago, 1913; Ph. D., 1919.

Nelson, Victor Emanuel, Associate Professor of Physiological Chemistry, 1920, 1919.
B. S., University of Wisconsin, 1912; M. S., 1914.

Iverson, Carrol A., Associate Professor of Dairying, 1919.
B. S. in Dairying, South Dakota State College, 1915; M. S., Iowa State College, 1917.

Pomeroy, Dwight Abel, B. S., Ph. B., Economic Science, 1921.

Brown, Mary Louise, A. B., M. A., English, 1920.

Mayser, Charles William, Professor of Physical Training, 1919, 1915.

Shattuck, Frederica Van Trice, Professor and Head of Public Speaking, 1916, 1907.
B. A., University of Wisconsin, 1905.

Harrison, Bruce Magill, Zoology, 1913, 1910.
B. S., Ottawa University, 1905; M. S., University of Illinois, 1908.

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* First date after the name indicates date of appointment to present position; the second date, when the first fails to do so, indicates the date of first appointment in the College.

Admission to College

Every student entering college must file an official statement of his previous educational work. Applications for credential blanks and all communications in regard to admission should be addressed to the Registrar. Official high school records should be filed with the Registrar at the close of the school year, if possible, and not later than the first Monday in September, December, or March. The Registrar will evaluate all credentials and will notify the applicant of their acceptance. He will also assign the applicant to his position in the course desired. Continuance in such assignment will be conditioned upon the student's doing creditable work.

Applicants for admission to all collegiate courses should be at least sixteen years of age.

Students may enter the College at the beginning of any quarter. Those wishing to come at the beginning of the second or third quarter should inquire from the Registrar whether entrance at that time is feasible in their cases. The regular classes begin with the opening in September and the students are urged to enter at that time. Some Freshman subjects are, however, begun in each quarter. The College desires to emphasize the importance of thorough preparation, particularly in subjects that are to be continued in College. Since satisfactory progress is impossible without thorough preparation, students are urged to review carefully, before entering College, algebra through quadratics and English composition and grammar. Those desiring admission should examine *Requirements for Admission,* below.

REQUIREMENTS FOR ADMISSION

Definition of a Unit

The requirements for admission are stated in terms of units. A unit is defined as the equivalent of one high school study satisfactorily pursued during one school year, at least thirty-six weeks in length, on the basis of five recitations a week, the course of study for which the student is registered requiring no more than four studies or twenty recitation periods a week. The length of the recitation period shall be at least forty minutes and the laboratory period shall be twice this length. A unit is equivalent to two semester credits.

PRE-TECHNICAL WORK

The following studies are prerequisites to the collegiate courses outlined in this catalogue.

For the Divisions of Agriculture, Engineering, Home Economics, Industrial Science and Veterinary Medicine, viz.:

(A) ENGLISH, three (3) units.
HISTORY, CIVICS, ECONOMICS, one (1) unit.
MATHEMATICS:

ALGEBRA, one and one-half (1½) units. One-half unit may be omitted for the Division of Veterinary Medicine.
PLANE GEOMETRY, one (1) unit.
SOLID GEOMETRY, one-half (½) unit. This may be omitted for the Divisions of Agriculture, Home Economics, and Veterinary Medicine.

(B) Enough work from the five principal groups of subjects, viz.: English, Foreign Language, History-Civics-Economics group, Mathematics and Natural Science to make a total of eleven (11) units including the units enumerated above under (A); but with a maximum of four units in any one foreign language, in English, in the History-Civics-Economics group, in Mathematics, or four and one-half units in Natural Science.

(C) ELECTIVES. Whatever work to the extent of four additional units the high school certifies as accepted by that school for graduation; subject to the definitions of units of entrance credit adopted by the North Central Association of Colleges and Secondary Schools, or in the bulletins published by the Iowa State Board on Secondary School Relations, and with only the following general restrictions:

a. Not less than one unit in Physics, Chemistry, or any foreign language, when one or more of these are included in the high school course.
b. Not less than one-half unit in any single subject, with the following exception: a minimum of one-third unit is accepted for work done in high schools organized on the basis of a four term year of twelve weeks each; this does not reduce the minimum credit demanded in subjects requiring not less than one unit of entrance credit.
c. No credit for English Grammar, United States History, or Arithmetic unless taken in the third or fourth year of the secondary school course; or, in the case of Arithmetic, after the completion of one and one-half units in Algebra.
d. In the case of Freehand or Mechanical Drawing, Manual Training, and the laboratory elements of Domestic Science, a double class period (85 minutes) must be required as the equivalent of an ordinary recitation period (40 to 45 minutes) in a non-laboratory subject.

Subjects Required or Accepted for Admission

The following is a list of subjects which will be accepted as prerequisite to the collegiate courses together with the number of units which will be accepted in each. These subjects must be offered according to the groups specified under paragraphs A, B, and C above.

Group 1. ENGLISH.

(1) A total of not more than 4 units, including the required 3 units. Not less than 3 semesters in Literature; and 3 semesters in Composition, Rhetoric, and Grammar, except that no credit will be given for Grammar if taken before the eleventh grade. Public speaking is not accepted as part of the three required units, nor when the total amount of credit presented in this group including public speaking, exceeds four units. The maximum credit accepted for public speaking is one-half unit.

Group 2. HISTORY, CIVICS, AND ECONOMICS.

(1) A total of not more than 4 units, including the required unit, and

not more than the maximum credit here indicated in each case; except that no credit will be given for United States History if taken before the eleventh grade.

(a) Ancient History	½ to 1 unit
(b) Medieval and Modern History	½ to 1 unit
(c) English History	½ to 1 unit
(d) United States History	½ to 1 unit
(e) General History (but not in addition to Medieval and Modern History)	1 unit
(f) Civics	½ to 1 unit
(g) Political Economy	½ unit
(h) Sociology	½ unit

Group 3. Foreign Language.

(1) A total of not more than 4 units in any one foreign language. No credit will be given for less than one unit in any foreign language.

(a) Greek	1 to 4 units
(b) Latin	1 to 4 units
(c) French	1 to 4 units
(d) Spanish	1 to 4 units
(e) German	1 to 4 units
(f) Scandinavian	1 to 4 units

Group 4. Mathematics.

(a) Algebra (required)	1½ units
(b) Plane Geometry (required)	1 unit
(c) Solid Geometry	½ unit
(d) Plane Trigonometry	½ unit
(e) Advanced Algebra	½ unit

Group 5. Natural Sciences.

(1) A total of not more than 4½ units will be accepted in this group.

(a) Agriculture Plant Industry Animal Industry Rural Economics General Agriculture	½ to 2 units
(b) Astronomy	½ unit
(c) Biology, elementary	½ to 1 unit
(d) Botany	½ to 1 unit
(e) Chemistry, not less than	1 unit
(f) General Science	½ to 1 unit
(g) Geology	½ unit
(h) Physical Geography or Physiography	½ to 1 unit
(i) Physics, not less than	1 unit
(j) Physiology	½ unit
(k) Zoology	½ to 1 unit

Group 6. Electives. Whatever work to the extent of four additional units the accredited school certifies as accepted by that school for graduation; subject to the definitions of units of entrance credit adopted by the North Central Association of Colleges and Secondary Schools, or in bulletins published by the Iowa Board on Secondary School Relations. A total of not more than 4 units will be accepted in commercial, industrial, and miscellaneous subjects.

(1) Commercial subjects.

(a) Arithmetic (not in addition to Advanced Arithmetic, and only if taken after the completion of the required 1½ units in Algebra or in the latter half of the high school course)	½ unit
(b) Elementary Bookkeeping	½ to 1 unit
(c) Advanced Bookkeeping	½ to 1 unit

(d) Commercial Law	½ unit
(e) Stenography and Typewriting (combined)	1 to 2 units
(f) Business Correspondence	½ unit
(g) History of Commerce	½ unit
(h) Economic History of England	½ unit
(i) Economic History of United States	½ unit
(j) Materials of Commerce	½ unit
(k) Commercial Geography	½ unit
(2) Industrial subjects.	
(a) Freehand or Mechanical Drawing	½ to 2 units
(b) Manual Training, i. e., Shop Work	½ to 4 units
(c) Domestic Science	½ to 2 units
(3) Miscellaneous.	
(a) Bible	½ to 1 unit
(b) Music	½ to 2 units
(c) Agriculture—additional units	½ to 2 units
(d) Psychology	½ to 1 unit
(e) Pedagogy and Methods	½ to 1 unit

Summary of Entrance Requirements by Divisions

Groups—	Division of Agriculture Units	Division of Engineering Units	Division of Home Economics Units	Division of Industrial Science Units	Division of Veterinary Medicine Units
1 English	3	3	3	3	3
2 History, Civics, Economics	1	1	1	1	1
3 Foreign Language*	----	----	----	----	----
4 Mathematics					
Algebra	1½	1½	1½	1½	1
Geometry, Plane	1 } 2½	1 } 3	1 } 2½	1 } 3	1 } 2
Geometry, Solid	------	½	------	½	------
5 Natural Sciences	----	----	----	----	----
6 Additional requirements in the above groups 1, 2, 3, 4, and 5: of these groups two must have 3 units each, and the five groups must have a minimum total of 11 units	4½	4	4½	4	5
Minimum total	11	11	11	11	11
7 Electives	4	4	4	4	4
Total units required for admission	15	15	15	15	15

* Each high school student is urged to complete two units in one foreign language.

Pre-technical Subjects Taught by the College

For the benefit of students who are not qualified to enter directly upon the technical courses leading to Baccalaureate degrees, certain general instruction of a preliminary character is offered. This is intended primarily to help those who have graduated from high schools but who have not sufficient general instruction to take up at once the work required in the technical courses. Such students may take any subjects which they are qualified to carry and which will round out in a fitting way their preparation for a technical course. Credit earned to remove entrance deficiencies will not be applied toward graduation.

METHODS OF ADMISSION

1. Admission of Graduates of IOWA HIGH SCHOOLS

A graduate of a public four-year high school in Iowa, who presents fifteen units of work, will be admitted without examination to such collegiate work as he is prepared to pursue, upon presenting a certificate signed by the Superintendent or the Principal, specifying the branches of study and credits included within his high school course of study. A graduate of any private four-year high school, seminary, or academy approved by the Board on Secondary School Relations will be admitted on the same basis.

If a high school graduate does not meet present admission requirements to the course he desires to pursue the deficiency must be removed by studies taken at the College. Credit earned in removing such deficiencies will not be applied toward graduation in the specific course chosen. See Pre-technical Subjects above.

2. Admission from Other Secondary Schools

A student presenting a certificate from a secondary school not described under 1 above, may be admitted to collegiate courses by the following plan:

(a) He must pass entrance examinations in subjects representing each of the main groups of subjects certified, for one-third of the number of acceptable credits so certified.
(b) The subjects for examination are to be selected by the examiner at the time of the examination and irrespective of the choice of the student.
(c) The total number of credits allowed on the certificate shall not exceed three times the number earned by examination.
(d) The total amount of credit gained by examination and certificate must at least equal the requirements for admission as stated on page 9.

3. Admission to Graduates of High Schools in Other States

Graduates of high schools accredited by the state universities or other state accrediting agencies will be admitted by certificate. High school graduates, whose certificates would be accepted without examination by reputable colleges in the state in which they are located, provided these states have no accrediting system, will be admitted by certificate. Graduates of other schools will be required to take entrance examinations.

4. Admission to Non-graduates of High Schools

The student not a graduate presenting credits from a public four-year high school or a private four-year high school, academy, or seminary, approved by the Board of Secondary School Relations:

(A) Such student will not be admitted unless he presents as many as fourteen (14) acceptable units by certificate, examination, or both certificate and examination; and he is to be conditioned in enough units to bring the number up to fifteen (15) units. These units must be distributed according to specified list of units found under pre-technical work on page 8.

(B) Entrance conditions must be removed within one calendar year after the student's admission, or before he registers for his second year's work; and the student is to be registered at once for the work in which he is deficient as a part of the normal amount of work allowed to students. If, however, he shows by the end of the first quarter that he is an unusually capable student, he may be permitted under the faculty regulations to carry more than normal schedule during the following quarter.

(C) A student admitted with conditions is not to be permitted to remove these conditions within the allotted one year by taking entrance examinations in subjects in which he has been taking college courses for credit.

If a student presenting the required entrance credit in a given subject fails to do satisfactory work in the succeeding college course in that subject, he is not to be assigned to a pre-technical course in the subject with a view of securing college credit for such pre-technical course.

6. Admission by Examination and on Other Evidences of Proficiency

Students who desire to enter by examination and who present satisfactory evidence that they have devoted sufficient time to preparation, will be given examinations in any subject required for entrance.

Students desiring to enter by examination will be expected to pass examinations in the required and elective subjects, according to work outlined on pages 9 to 12.

COLLEGE ENTRANCE EXAMINATIONS

Certificates of entrance examinations passed for admission to reputable universities and colleges, and certificates of examination passed under the direction of any of the College Entrance Examination Boards and the Regents of the State of New York, may be accepted as are accepted the certificates from our own accredited schools.

ACADEMIES AND PREPARATORY SCHOOLS

Credits certified from private secondary schools such as academies and seminaries, and from college preparatory schools, shall be estimated in accordance with the definition of the entrance unit and on the standard of four years of preparation and residence. College academies or preparatory departments conforming in their organization with the organization of the four-year accredited high school shall be treated as accredited schools, if the colleges themselves are regarded as standard colleges.

TEACHERS' CERTIFICATES

A certain number of entrance units may be granted upon the basis of a First Grade Uniform County Certificate for subjects marked 85% or above, as follows: Arithmetic, ½ unit; United States History, ½ unit; Physiology, ½ unit; Grammar, ½ unit; Civics, ½ unit; Economics, ½ unit; Algebra, 1 unit; Agriculture, ½ unit; Domestic Science, ½ unit; and for State Certificates when gained by examination, as follows: Second Grade, 10½ units; First Grade, 14 units; Life Diploma, 16 units.

7. Admission to Advanced Standing for High School Work

Advanced, or college, credit may be given for extra high school or secondary school work only on the following conditions:

1. The number of units reported and accepted must be in excess of sixteen (16).
2. There must be a rigorous examination for college credit.

ENTRANCE EXAMINATION PROGRAM

Admission to the entrance examinations is by permit. Permits may be obtained from the Registrar, Room 118, Central Building.

A representative from each department will conduct the examinations in Room 118, Central Building, on Thursday and Friday preceding classification.

Any student finding a conflict in his program should report to the Registrar for adjustment.

Thursday:

Algebra	8-10 A. M.
Plane Geometry	8-10 A. M.
English	10-12 A. M.
Latin, first year	1- 3 P. M.
Latin, second year	1- 3 P. M.
Botany	3- 5 P. M.
Physiology	3- 5 P. M.
Physiography	3- 5 P. M.

Friday:

Algebra	8-10 A. M.
Solid Geometry	8-10 A. M.
History, General	10-12 A. M.
History, American	10-12 A. M.
History, English	10-12 A. M.
Civics	1- 3 P. M.
Physiology	1- 3 P. M.
Physiography	1- 3 P. M.
Physics	3- 5 P. M.
Latin, first year	3- 5 P. M.
Latin, second year	3- 5 P. M.

The Registrar will arrange for the other entrance examinations required by the candidates for admission.

Advanced Standing

Students of other colleges will be admitted to advanced standing in this College under the following conditions:

First, they must present a letter of honorable dismissal.

Second, the entrance requirements of this College must be fully satisfied (see Admission under Entrance Requirements).

Third, it is required that all credits from other colleges be sent by the proper officers of such institutions, duly certified, to the Registrar of this College; such certificates to include number of weeks the student has pursued the studies in question and the number of hours' credit received in each quarter or semester, as well as the portion of the subject covered.

No credits shall be accepted from any high school or academy for regular four-year college work. It is the privilege of any student to ask for and receive examination in any subject taught in any department of the College, provided that he can show to the satisfaction of the head of the department that he has made the necessary preparation.

Students from other colleges.

Work of recognized merit that has been taken in colleges and universities of good rank and standing will be credited for an equivalent amount of work so far as it applies in any course offered in this College.

Such students should send official records of their work to the advanced standing committee at the office of the Registrar not later than September 1st to ascertain the credits to be allowed. It will be understood between the applicant and the committee that the credits are only provisionally accepted and that their final acceptance depends wholly upon the student's maintaining a good average standing for one year.

Graduates of approved colleges, who are not candidates for a degree, may take special work in this institution under the rules governing special students, without having to complete the Freshman year in any of the college courses.

Classification of such Special Students must be approved by the President of the College and the Dean of the Division or Head of the Department in which the student is registered.

Fees and Expenses

Expenses: The average expenses for men need not exceed from $500 to $700 per year. For the women, the average will be about $500 per year.

Honor Scholarships: The State Board of Education has provided one honor scholarship for each four-year approved high school in the state. The scholarship is worth $40.00 for the year. This amount will be allowed on fees.

As soon as any school has made its nomination for the scholarship, the school authorities are expected to report the name and address of the nominee, together with a signed certificate of scholarship, to the Secretary of the Board on Secondary School Relations, State Board of Education, Des Moines Iowa, who will approve the nomination if the conditions have been met, forward the proper credentials to the candidate, and send the certificate of credits to the institution elected.

Nominations should be made in June, and must be made not later than August 1st of each year.

The announcement regarding these honor scholarships is subject to change at any time.

Tuition: The Code of Iowa reads as follows: "The tuition in the College herein established shall be forever free to pupils from the state over sixteen years of age, who have been residents of this state six months previous to their admission."

To non-resident students a tuition fee of $17.00 per quarter is charged.

Tuition Scholarships: This form of Tuition Scholarships is intended only for those students from other states, who need such aid to secure a college education. The conditions on which this aid is granted are as follows: (1) The applicant must be in need of financial assistance; (2) The applicant must be of good moral character; (3) The applicant must give evidence of good preparation; (4) The recipient must give evidence of ability, by good standing in one of the regular courses.

The aid which is given from the Tuition Scholarships Fund is not regarded as a loan. If a student who receives this aid is able to return the amount in later years, it will be credited to his accounts on the books of the College Treasurer, and the sum will be put into the Tuition Scholarship Fund of the College for the use of future students.

All applications for these scholarships must be made on the uniform blanks furnished by the President.

Thirty-eight tuition scholarships are available: eight to each collegiate class, two to non-collegiate students, and four to students from foreign countries.

Application should be made to the Chairman of the Committee on Tuition Scholarships.

International Scholarships are granted to students from the countries of our allies in the war; said scholarships to exempt each of such stu-

dents from the payment of fees and tuition to an amount not to exceed $100 annually. There are ten such scholarships.

Application should be made to the Chairman of the Committee on Tuition Scholarships.

Incidental and Janitor Fees: The regular incidental and janitor fee for the quarter is $6.00 for all students who complete their classification during the regular classification period. Beginning with the first day on which classes are held, the fee for college students will be $8.00 plus $1.00 additional for each day thereafter until the classification is completed. This fee is used as follows: hospital, $2.00; students' repair fund, $1.00; incidental and janitor service, balance. Students who register for part-time work, instead of paying the full incidental and janitor fee, may pay the hospital fee of $2.00, and 50c per credit hour for the hours or fraction of hours work taken.

Physical Training Fee: All men students, (except those in Graduate College) are required to pay a fee of $1.00 per quarter. This fee entitles the student to the general use of the gymnasium including the lockers and shower baths. (Men who are required to classify in Physical Training shall pay a fee of $1.00 per quarter in addition to this fee).

Withdrawing from College: If a student severs his connection with the College, he shall obtain an order to settle from the Registrar, Room 114 Central Building, which order shall be filed with the Treasurer. The refund will be made at the close of the quarter.

Laboratory Fees: Laboratory fees at the actual cost of breakage and usage are charged to the students, the Treasurer's receipt for such fees being required before the students are admitted to laboratories. For the amount of the fee in any study, see description of the study under its department. All refunds on laboratory fees will be made at the close of the quarter.

Diploma Fee: A diploma fee of $5.00 is payable before graduation.

Exemption from Fees: All honorably discharged soldiers and sailors of the World War shall be exempt from fees to the amount of $40 per year, said amount to be divided as follows: $6.00 incidental and janitor fee and $1.00 general physical training fee for each quarter, and a rebate of $6.33 per quarter on laboratory fees, this rebate to be made at the end of the quarter. The State law makes this exemption effective until July 1, 1923. Students claiming this exemption shall show their discharge papers at the Treasurer's office when they enter college.

Board and Rooms for Men: The room bureau for men is handled by the Young Men's Christian Association. A faculty committee known as the Committee on Student Accommodations supervises the work of the bureau. The average price of rooms at present is as follows: Where two occupy a room, $2.50 to $3.00 for each occupant per week. Where one occupies a room the price ranges from $4.00 to $6.00 per week. A few rooms are lower than the price here stated and a few are higher, but the above price is the average. Board, at the time this goes to press, averages about $6.00 per week. The average price of room and board is, therefore, about $8.50 to $9.00 per week. Rooms may be secured by addressing the Secretary of the Y. M. C. A., Iowa State College, Ames, Iowa. New students are advised to secure their rooms before arrival. Board usually has to be arranged for by the student after reaching Ames.

For the information of students and others interested, the Student Accommodation Committee has prepared a standard set of rules for

houses furnishing room or board to students. The Committee reserves the right to forbid students to room in houses which do not meet the standard requirements. Copies of the regulations may be obtained by application to the Y. M. C. A., the President's office, or the Chairman of the Student Accommodation Committee.

Text Books: All text books and stationery may be purchased at the College Book Store at about 20 per cent below the average retail price.

Freshman Expenses

Taking into consideration the items named under Fees and Expenses, the following is an approximate estimate of the expenses of a Freshman for each of the three quarters of the College year:

	Minimum Amount	Maximum Amount
Board (12 weeks)	$60.00	$96.00
Room rent (12 weeks—2 in a room)	24.00	42.00
Laundry	12.00	18.00
Incidental and janitor fee	6.00	8.00
Laboratory fees	10.00	18.00
Books and equipment	15.00	30.00

Note: Prospective Freshmen should carefully consider the cost of the first year. No one should think of entering college unless he has money enough in his own right or from friends to meet his expenses in large part for his Freshman year. If he goes out of his Freshman year in debt, he is quite sure to be seriously embarrassed for the remainder of his college course. Provision should be made to meet college bills with the same business-like promptness with which one expects to meet other bills.

All men pay a general Physical Training fee of $1.00 per quarter.

Members of the R. O. T. C. will have their uniforms furnished by the government. All other students will receive information as to prices from the commanding officer of the Military department.

In addition to these items, at the beginning of the Freshman year each man student will be required to purchase a gymnasium suit for $5.00; and each woman student a gymnasium suit for $7.50.

The student is also advised to purchase a student's activities ticket and to pay class dues.

The military and gymnasium suits and drawing equipment will be serviceable for the entire course.

If a student is a non-resident of the state $17.00 per quarter should be added for tuition.

The incidental and janitor fee, laboratory fees, books and equipment, gymnasium outfit, and some payment toward room rent and board are required in advance.

Classification and Standing

Junior and Senior College: The students are classified in Junior and Senior colleges. The Junior college is composed of all students in the Freshman and Sophomore years; the Senior college, of all students in the Junior and Senior years.

Amount of Work: The amount of work in each course is expressed in credits, a credit meaning one recitation a week, or its equivalent, throughout the quarter. It is considered that a one-hour recitation or lecture will require as much time including preparation as a three-hour laboratory, and therefore it is given the same credit. Any two-hour laboratory period is equivalent to two-thirds of a three-hour laboratory.

Number of Credits: No student shall classify in more than the maximum number of hours allowed in his course unless by his previous record he has shown exceptional ability. In no case shall he be classified in more than twenty hours. The student will be allowed to drop such extra work only upon permission of the classifying Dean; he will be required to drop it in case this or any other work in his schedule is being carried unsatisfactorily. A "condition" or a "not pass" secured in such extra work shall stand as a record, and shall be considered in choosing fraternity members, but an elective shall not be held against the student for graduation.

In general, students failing in any portion of a quarter's work will not be allowed to take full classification for the next quarter.

Classification: No student shall be admitted to any class or dropped from it, except by authority of the classifying officer.

Conflicts: Students shall not classify in conflicting studies without the approval of the departments concerned.

Standings: All the standings are based on the scale of 100. The passing grade is 75. A student receiving from 60 to 74 per cent inclusive in any course is conditioned, and allowed to make up the condition under the direction of the head of the department.

Back Studies: Students shall be classified in back studies in all cases in which such studies are taught, subject to the first rule under Number of Credits. Any exception to this rule must be for good and sufficient reason, approved by the classifying Dean.

Changing Course: A student will not be permitted to change from one course to another who has a "condition" or "not pass" in a subject not common to the two courses; or if he has more than one "condition" or "not pass" in subjects common to the two courses.

Senior Year: No student shall be considered a candidate for graduation who at the beginning of the Spring quarter of the Senior year has more than twenty hours of work to complete his course of study. If the uncompleted work is not included in the student's classification for the Spring quarter, it shall be passed and reported to the Registrar not later than April first.

Division of Veterinary Medicine

DEAN STANGE, Veterinary Building

VICE DEAN BEMIS, Veterinary Building

The division of Veterinary Medicine offers the following courses:

Four-year Course: Veterinary Medicine ..... p. 21
Six-year Course: Animal Husbandry and Veterinary Medicine ..... p. 22
Six-year Course: Science and Veterinary Medicine ..... p. 24

The Division of Veterinary Medicine offers a four-year course leading to the degree of Doctor of Veterinary Medicine, and combined six-year courses with either the Division of Industrial Science or the Department of Animal Husbandry, and leading to both B. Sc. and D. V. M. degrees. The Veterinary Division consists of five educational departments, the head of each department being a man of broad experience in the particular branches of medical science which the department represents.

The following departments are included in the Division:

Department of Anatomy ..... p. 25
Department of Pathology ..... p. 27
Department of Physiology and Pharmacology ..... p. 28
Department of Medicine ..... p. 26
Department of Surgery ..... p. 29

The faculty of the Division of Veterinary Medicine consists of the Dean of the Division, together with the professors at the head of departments, the associate and assistant professors in the departments, and instructors. Representatives (to the number indicated) of the following departments outside of the Veterinary Division, in which the veterinary students do a part of their work, are considered members of the veterinary faculty: Chemistry (1), Botany (1), Animal Husbandry (1), Dairying (1), English and Economic Science (1), and Zoology (1).

Aside from the strictly educational departments in the Division, there is also the Department of Research in Animal Diseases, which gives the student rare opportunity to observe those phases of veterinary science in which this department is engaged.

Aside from the facilities which belong especially to the Veterinary Division, the equipment for instruction in Animal Husbandry, consisting of large flocks and herds of carefully selected breeds of live stock, helps to render practical instruction very efficient. The most perfect types of the different breeds are used for class work. In this way the work in Veterinary Medicine is linked with that in Agriculture, an arrangement which proves to be of inestimable value to veterinarians. The fact that the College is located in the richest live stock country in the world provides a rare opportunity for the veterinary student to study this phase of animal industry; it also enables him to observe a wealth of clinical cases both at the College Hospital, and under general practice conditions by means of the Ambulatory Clinic.

Work in Botany, Chemistry, Zoology, and other related sciences is adequately provided for in the special buildings for the accommodation of these several departments of college work. Each branch of study is presented to the student by a specialist.

Candidates for graduation must be twenty-one years of age, of good

moral and professional character, and must have passed examinations in all the required subjects in the course, to secure the degree of Doctor of Veterinary Medicine.

The following are a few of the many openings available to graduates:

General Practice: In view of the fact that the national live stock valuation is estimated at $10,000,000,000, it becomes obvious that the graduate possessing fitness and aptitude for live stock work will meet with a ready demand and receive substantial compensation for his services.

Bureau of Animal Industry: Veterinarians are in demand for inspection work in the Bureau of Animal Industry, United States Department of Agriculture, at salaries ranging from $1,400 to $2,500.

Army Veterinary Service: Excellent opportunities are now offered to young veterinarians in the United States Army. The Army Veterinary Corps is organized as a part of the Medical Department of the Army, and army veterinarians receive the rank, pay, and allowances of commissioned army officers, entering with the rank of lieutenant at $1,700 per year, with excellent opportunity for advancement in rank, with corresponding increases in salary and allowances. These positions are very desirable, and include a wide range of professional work.

Municipal and State Work: Owing to the fact that the larger cities are rapidly inaugurating systems of milk and meat inspection, there is an increasing demand for competent veterinarians drilled in Bacteriology and Pathology. A large number of state positions are also open, on account of the rigid laws governing inter-state shipment of live stock which are being enacted by the various states.

Sanitation: The value of the educated veterinarian as a sanitarian is being recognized and positions are open in this field.

Education and Research: The demand for men capable of doing investigation work in animal diseases, associated work in connection with State Experiment Stations, and of filling various teaching positions in agricultural and veterinary colleges, has been greater than the supply.

Commercial Work: The lines of commercial work which demand trained veterinarians are increasing yearly. These include positions with railway companies, live stock concerns, in biological laboratories, pharmaceutical houses, etc. The demand for qualified veterinarians exceeds the supply, and many graduates go directly from college to positions paying $150 per month and upward.

Courses

Course in Veterinary Medicine

Leading to the degree of Doctor of Veterinary Medicine.

FRESHMAN YEAR

Fall Quarter	Credits[2]
Gross Anatomy Vet. Anat. 1101	4
General Zoology Zool. 1aC	3
Market and Breed Types A. H. 121	2⅓
General Chemistry Chem. 511	6⅔
Military 51a	1
Phys. Tr. & Hygiene P. T. & Hyg. 10a	R[3]
	17

Winter Quarter	Credits
Gross Anatomy Vet. Anat. 120	5
General Zoology Zool. 1bC	2⅔
Market and Breed Types A. H. 122	2⅓
English Engl. 301a	2
Organic Chemistry Chem. 821	5
Military 51b	1
Physical Training P. T. 10b	R
Individual Hygiene Hyg. 10b	R
	18

Spring Quarter	Credits
Gross Anatomy Vet. Anat. 130	5
Microscopic Anatomy Vet. Anat. 111	2⅓
Market and Breed Types A. H. 123	2⅓
English Engl. 301b	2
Physiological Chem. Chem. 822	5
Military 51c	1
Phys. Tr. & Hygiene P. T. & Hyg. 10c	R
	17⅔

SOPHOMORE YEAR

Fall Quarter	Credits
Gross Anatomy Vet. Anat. 212	5
Bacteriology Vet. Path. 210	4
Microscopic Anatomy Vet. Anat. 121	2⅓
Pharmacy Vet. Phys. 311	2⅔
Comp. Physiology Vet. Phys. 211	4
Military 52a	1
Physical Training P. T. 11a	R
	19

Winter Quarter	Credits
Gross Anatomy Vet. Anat. 222	5
Bacteriology Vet. Path. 220	4
Microscopic Anatomy Vet. Anat. 131	2⅓
General Pathology Vet. Path. 223	2
Comp. Physiology Vet. Phys. 221	4
Military 52b	1
Physical Training P. T. 11b	R
	18⅓

Spring Quarter	Credits
Gross Anatomy Vet. Anat. 232	6
General Pathology Vet. Path. 233	4⅓
Comp. Physiology Vet. Phys. 231	4
Embryology Zool. 202	3
Military 52c	1
Physical Training P. T. 11c	R
	18⅓

JUNIOR YEAR

Fall Quarter	Credits
Medicine Vet. Med. 313	5
Special Pathology Vet. Path. 310	5
Materia Medica Vet. Phys. 312	3
General Surgery Vet. Surg. 327	3
†Clinics Vet. Surg. 314	3
	19

Winter Quarter	Credits
Medicine Vet. Med. 323	5
Animal Parasites Vet. Path. 325	4
Therapeutics Vet. Phys. 326	3
General Surgery Vet. Surg. 337	3
†Clinics Vet. Surg. 324	3
	18
Elective Animal Breeding A. H. 251	3

Spring Quarter	Credits
Medicine Vet. Med. 333	5
Milk Inspection Dy. 66	2
Therapeutics Vet. Phys. 336	4
Special Surgery Vet. Surg. 411	5
†Clinics Vet. Surg. 334	3
	19

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[1] The number refers to the description of the study.

[2] For definition of a credit, see page 25.

[3] R indicates that the study is required, without credit, for graduation.

† Part credit may be omitted by students appointed to the Reserve Officers' Training Corps, arrangements to be made with the classifying officer.

SENIOR YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Clinics		Clinics		Clinics	
Vet. Surg. 413	4	Vet. Surg. 423	4	Vet. Surg. 433	4
Medicine		Medicine		Medicine	
Vet. Med. 412	4	Vet. Med. 422	4	Vet. Med. 432	4
Special Surgery		Business Law		Animal Feeding	
Vet. Surg. 421	5	Ec. Sci. 231	3	A. H. 241	3
Obstetrics		Special Surgery		Food Hygiene	
Vet.Surg. 414	4	Vet. Surg. 431	5	Vet. Path. 430	3
†Post Mortem		†Extempore Speech		†Serum Therapy	
Vet. Path. 416	1	P. S. 30	2	Vet. Path. 338	4
	18		18		18
Elective				Elective	
Surg. & Applied Anat.				Therapeutics	
Vet. Anat. 510	2			Vet. Phys. 533	1

Course in Animal Husbandry and Veterinary Medicine. (Six Years)

FIRST YEAR

Fall Quarter	Credits[2]	Winter Quarter	Credits	Spring Quarter	Credits
General Chemistry		General Chemistry		Qualitative Analysis	
Chem. 502	4	Chem. 503	4	Chem. 504	4
Graphic Methods		Plant Morphology		Microscopic Anatomy	
A. E. 80	1	Botany 135	2⅓	Vet. Anat. 111	2⅓
Mathematics		Small Grain Prod.		Corn Production	
Math. 13	4	F. C. 152	4	F. C. 151	4
Forge					
A. E. 51	2				
Types & Classes of Live Stock		Types & Classes of Live Stock		Types & Classes of Live Stock	
A. H. 101	2	A. H. 102	2	A. H. 103	2
Gross Anatomy		Gross Anatomy		Gross Anatomy	
Vet. Anat. 110	4	Vet. Anat. 120	5	Vet. Anat. 130	5
Military 21a or 51a	1	Military 21b or 51b	1	Military 21c or 51c	1
Phys. Tr. & Hygiene		Physical Training		Phys. Tr. & Hygiene	
P. T. & Hyg. 10a	R[3]	P. T. 10b	R	P. T. & Hyg. 10c	R
		Individual Hygiene			
		Hyg. 10b	R		
	18		18⅓		18⅓

SECOND YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Applied Organic		Applied Organic		Agric. Analysis	
Chem. 751a	3⅓	Chem. 751b	3⅓	Chem. 752	3⅓
Breed Studies		Breed Studies		Breed Studies	
A. H. 113	3⅓	A. H. 112	3⅓	A. H. 111	3⅓
Composition		Exposition		Narration and Descrip.	
Eng. 40a	3	Engl. 40b	3	Engl. 40c	3
Gross Anatomy		Gross Anatomy		Gross Anatomy	
Vet. Anat. 212	5	Vet. Anat. 222	5	Vet. Anat. 232	6
Microscopic Anatomy		Microscopic Anatomy		Mechanics and Heat	
Vet. Anat. 112	2⅓	Vet. Anat. 131	2⅓	Physics 101	3
Military 22a or 52a	1	Military 22b or 52b	1	Military 22c or 52c	1
Physical Training		Physical Training		Physical Training	
P. T. 11a	R	P. T. 11b	R	P. T. 11c	R
	18		18		19⅔

THIRD YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Animal Nutrition		Feeding & Mgt. of Horses		Animal Breeding	
A. H. 218	3	A. H. 222	2⅔	A. H. 250	3
General Zoology		General Zoology		Embryology	
Zool. 1a	3	Zool. 1b	3	Zool. 202	3

Poultry Husbandry A. H. 400	4
Bacteriology Vet. Path. 210	4
Comp. Physiology Vet. Phys. 211	4
	18

General Genetics Genetics 22	3
Poultry Husbandry A. H. 402	1⅔
Bacteriology Vet. Path. 220	4
Comp. Physiology Vet. Phys. 221	4
	18⅓

Farm Forestry For. 70	3
Forage Crop Product. F. C. 154A	4
Live Stock Judging A. H. 210	1
Comp. Physiology Vet. Phys. 231	4
	18

FOURTH YEAR

Fall Quarter	Credits
Advanced Judging A. H. 211	2⅓
Feeding & Management A. H. 224	2⅔
General Horticulture Hort. 71A	4
Soils Soils 151A	3⅓
Materia Medica Vet. Phys. 312	3
Pharmacy Vet. Phys. 311	2⅔
	18

Winter Quarter	Credits
Botany of Weeds Bot. 490a	3
Economic History Hist. 124	3
Feeding & Marketing of Horses A. H. 231	1⅓
Milk Production A. H. 312	1⅔
Soil Fertility Soils 251	3⅓
General Pathology Vet. Path. 223	2
Therapeutics Vet. Phys. 326	3
	17⅓

Spring Quarter	Credits
Beef Production and Marketing A. H. 232	1⅔
Feeding & Management of Dairy Cattle & Hogs A. H. 223	2⅔
Fertilizers Soils 252A	3⅓
Mutton & Wool Production and Marketing A. H. 234	1⅔
Pork Production and Marketing A. H. 233	1⅔
General Pathology Vet. Path. 233	4⅓
Therapeutics Vet. Phys. 336	4
	19⅓

FIFTH YEAR

Fall Quarter	Credits
General Surgery Vet. Surg. 327	3
Clinic Vet. Surg. 314	3
Medicine Vet. Med. 313	5
Special Pathology Vet. Path. 310	5
Electives	2
	18

Winter Quarter	Credits
Thesis A. H. 290	3
Animal Parasites Vet. Path. 325	4
Clinic Vet. Surg. 324	3
General Surgery Vet. Surg. 337	3
Medicine Vet. Med. 323	5
	18

Spring Quarter	Credits
Farm Meats A. H. 270	3
Herd Book Study A. H. 260	4
Clinic Vet. Surg. 334	3
Special Surgery Vet. Surg. 411	5
Medicine Vet. Med. 333	5
	20

SIXTH YEAR

Fall Quarter	Credits
Clinic Vet. Surg. 413	4
Medicine Vet. Med. 412	4
Obstetrics Vet. Surg. 414	4
Special Surgery Vet. Surg. 421	5
	17

Winter Quarter	Credits
Veterinary Law Ec. Sci. 231	3
Clinic Vet. Surg. 423	4
Medicine Vet. Med. 422	4
Special Surgery Vet. Surg. 431	5
Seminar A. H. 283	2
	18

Spring Quarter	Credits
Clinic Vet. Surg. 433	4
Food Hygiene Vet. Path. 430	3
Medicine Vet. Med. 432	4
Serum Therapy Vet. Path. 338	4
Electives	4
	19

Course in Industrial Science and Veterinary Medicine (six years)

Leading to the degree of Bachelor of Science and the degree of Doctor of Veterinary Medicine.

The following course is designed to meet the need of the students who wish to secure a thorough foundation in the biological and chemical sciences preliminary to the studying of veterinary medicine. The degree of Bachelor of Science is granted at the end of the fourth year, and the degree of Doctor of Veterinary Medicine upon the completion of the sixth year. The increased time at the disposal of the student gives an opportunity to prepare himself efficiently for investigational work.

At the present time the better colleges granting degrees in human medicine require two years of collegiate preparation. Veterinary Medicine is quite as exacting in its requirements of students, particularly those who wish to go into governmental or research work. The opportunities open to students well grounded both in science and in veterinary medicine are excellent. Many positions in the Bureau of Animal Industry of the Department of Agriculture, in the experiment stations of our land grant colleges, and in the teaching staffs of our various veterinary schools and agricultural colleges, are opened every year. It has been in the past practically impossible to secure men with the right training. This course is designed to train men for such positions.

For pre-technical studies required for this course, see page 8.

FRESHMAN YEAR

Fall Quarter	Credits[2]	Winter Quarter	Credits	Spring Quarter	Credits
General Chemistry Chem. 502[1]	4	General Chemistry Chem. 503	4	Qualitative Analysis Chem. 504	4
Composition Engl. 40a	3	Exposition Engl. 40b	3	Micro. Anatomy Vet. Anat. 111	2⅓
German Mod. Lang. 410a	4 or 5	German Mod. Lang. 410b	4 or 5	German Mod. Lang. 410c	4 or 5
Gross Anatomy Vet. Anat. 110	4	Gross Anatomy Vet. Anat. 120	5	Gross Anatomy Vet. Anat. 130	5
Military 21a	1	Military 21b	1	Military 21c	1
Phys. Tr. & Hygiene P. T. & Hyg. 10a	R[3]	Physical Training P. T. 10b	R	Phys. Tr. & Hygiene P. T. & Hyg. 10c	R
		Individual Hygiene Hyg. 10b	R		
Electives	0-1				
	17		17-18		16⅓-17⅓

SOPHOMORE YEAR

Fall Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Applied Organic Chem. 751a	3⅓	Applied Organic Chem. 751b	3⅓	Agr. Analysis Chem. 752	3⅓
Mathematics Math. 13	4	Mechanics & Heat Phys. 101	3	Extempore Speech P. S. 30	3
Sci. German Mod. Lang. 425a	3	Sci. German Mod. Lang. 425b	3	Sci. German Mod. Lang. 425c	3
Micro. Anatomy Vet. Anat. 121	2⅓	Micro. Anatomy Vet. Anat. 131	2⅓	Narration & Desc. Engl. 40c	3
Gen. Zoology Zool. 1aA	3	Gen. Zoology Zool. 1bA	3	Gen. Zoology Zool. 1cA	3
Military 22a	1	Military 22b	1	Military 22c	1
Physical Training P. T. 11a	R	Physical Training P. T. 11b	R	Physical Training P. T. 11c	R
		Electives	2	Electives	2
	16⅔		17⅔		18⅓

1 The number refers to the description of the study.
2 For definition of a credit, see page 25.
3 R indicates that the study is required, without credit, for graduation.

THIRD AND FOURTH YEARS

The student will classify with the Dean of Veterinary Medicine as a Senior college student in Industrial Science and Veterinary Medicine. In the quarter in which he completes the requirements for the Bachelor's degree, he shall also register with the Dean of Industrial Science. He shall outline his course of study, guided by the following rules:

1. A minimum of 18 hours per quarter shall be carried.

2. All subjects of the Freshman and Sophomore years of the four-year course in veterinary medicine not already taken shall be completed (excepting Chemistry 511, 821, 822, and Zoology 1a, 1b).

3. English 441 or English 442 and at least fifteen hours of free electives, i. e., subjects not required of students pursuing the four-year course in Veterinary Medicine, shall be completed.

The degree of Bachelor of Science will be conferred upon fulfillment of the preceding requirements.

FIFTH AND SIXTH YEARS

The student will classify with the Dean of Veterinary Medicine as a Senior college student in Veterinary Medicine. He shall outline his course in conformity with the following requirements:

1. A minimum of 18 hours per quarter shall be carried.

2. All subjects of the Junior and Senior years of the four-year course in Veterinary Medicine shall be completed.

3. Free electives shall be chosen to fill the number of credit hours to the required 18.

The degree of Doctor of Veterinary Medicine will be conferred upon the fulfillment of the preceding requirements.

Short Course for Practitioners in Veterinary Medicine

It is proposed to arrange the course so that practitioners may spend a few days at Ames and get the latest and best that is being made available in any state or country.

Definition of a Credit: The amount of work in each study is expressed in credits, a credit meaning one recitation or its equivalent a week throughout the quarter. It is considered that a one-hour recitation or lecture will require as much time including preparation as a three-hour laboratory, and therefore should be given the same credit. Any two-hour laboratory period is equivalent to two-thirds of a credit.

Study Numbers: In each department the studies, for convenience of reference, are given in numerical order.

VETERINARY ANATOMY

Professor Murphey, Anatomy Building, Veterinary Group, Room 117
Assistant Professor Aitken; Instructor McNutt; Graduate Assistant Evans

For information concerning the Division of Veterinary Medicine, see page 19.

The Department of Anatomy gives instruction to students in both Veterinary Medicine and Animal Husbandry. The laboratories are well equipped. In histology and osteology each student is assigned an individual desk provided with a microscope, 100 permanent mounts of tissue, laboratory notes, and one-half skeleton of disarticulated bones of

the horse. The dissecting room is modern, sanitary, and well equipped. All cadavers are preserved. Students in Animal Husbandry prepare for their work in nutrition and stock judging. Veterinary students should have a detailed knowledge of the structure of the domestic animals and birds to understand properly Physiology, Pathology, Diagnosis, Surgery, and Medicine.

The following methods are used in teaching anatomy: didactic instruction, quiz, specimen demonstration, specimen study, lantern slide demonstration, dissection, sketching, the use of the living horse for palpating and outlining the structures. A large and well selected number of specimens and lantern slides are used in the class and laboratory demonstrations to emphasize the most important structures and their relations from a clinical standpoint. These are also available for student use. In the laboratory special attention is given to fascial compartments, joint pouchings, vaginal sheaths, bursae, and topography. Class work in splanchnology also covers the microscopic anatomy.

The class work is mostly quizzes, with supplemental statements and demonstrations by the instructors to fix the knowledge of the structures of the animal body gained in the laboratory by the student.

Description of Studies

110, 120, 130. **Gross Anatomy, Osteology, Arthology, Splanchnology, Myology.** Demonstrations; dissection of horse; systemic anatomy of bones, joints, digestive, respiratory, genito-urinary systems. (110) Fall. Rec. 3; lab. 1, 3 hr.; credit 4; fee $1.00. (120) Prerequisite 110. Winter. Rec. 2; labs 3, 3 hr.; credit 5; fee $2.00. (130) Prerequisite 120. Spring. Rec. 2; labs. 3, 3 hr.; credit 5; fee $2.00. Professor Murphey.

111, 121, 131. **Microscopic Anatomy.** Use of microscope. Cells and tissues, morphologically and comparatively. Comparative amounts of parenchyma and supporting tissue. (111) Spring. Lect. 1; labs. 2, 2 hr.; credit 2⅓; fee $2.00. (121) Prerequisite 111. Fall. Lect. 1; labs. 2, 2 hr.; credit 2⅓; fee $4.00. (131) Prerequisite 121. Winter. Lect. 1, labs. 2, 2 hr.; credit 2⅓; fee $2.00. Professor Murphey.

212, 222, 232. **Gross Anatomy, Myology, Angiology, Neurology, Comparative Anatomy.** Systemic anatomy of muscles, fascial, vascular, and nervous systems. Dissection of horse, ox, sheep, pig, dog, chicken. (212) Prerequisite 130. Fall. Rec. 3; labs. 2, 3 hr.; credit 5; fee $3.00. (222) Prerequisite 212. Winter. Rec. 2; labs. 3, 3 hr.; credit 5; fee $5.00. (232) Prerequisite 222. Spring. Rec. 3; labs. 3, 3 hr..; credit 6; fee $5.00.

510. **Surgical and Applied Anatomy.** A demonstration subject. Dissections before the class. Specimens, lantern slides, and living animals will be used. Prerequisite, first three years of the Veterinary Course. Fall. Lect. 1; lab. 1, 3 hr.; credit 2; fee $2.00.

610. **Anatomy of Domestic Animals.** (For Animal Husbandry students.) Skeleton, muscles and visceral organs of the horse and ox, including the common unsoundnesses of the horse. Lectures and demonstrations. Fall or Winter. Rec. 2. demonstrations 2, credit 3⅓; anatomy fee $1.00; surgery fee $.50.

713. **Research in Anatomy.** Problems relating to Animal Husbandry, Physiology, Pathology, and Surgery. Anatomical problems of systemic, topographic, or comparative nature. Labs. 3 or 4; credit 3 or 4. Professor Murphey.

714. **Research in Microscopic Anatomy.** Physiological histology; problems of importance to pathology or those relating to histogenesis or morphology. Credit 3-10 as arranged. Professor Murphey.

VETERINARY MEDICINE

PROFESSOR STANGE, Administration Building, Veterinary Group, Room 106
Associate Professor Covault; Assistant Professor Walsh

For information concerning the Division of Veterinary Medicine, see page 19.

The study of medicine summarizes and shows the application in practice of the training previously received in Anatomy, Physiology, Path-

ology, Bacteriology, and Therapeutics. The work is given in the form of lectures and clinical demonstrations and extends throughout the Junior and Senior years. Diagnostic methods employed in the detection of animal diseases are carried out by each student on the various organs and systems of the different species of animals. The surrounding community furnishes an abundance of material for such work. When cases cannot be brought to the hospital, students are taken to the farms and given actual practice in the diagnosis and treatment of the cases under supervision of an experienced member of the faculty. The latter arrangement provides a large variety of cases and gives opportunity to observe both healthy and diseased animals under natural farm conditions, and the student is taught how to overcome difficulties frequently met with on farms where facilities are restricted.

Infectious diseases are considered in detail, diagnosis and methods of control being especially emphasized.

General sanitation and hygiene are taken up with special reference to the most practical means of keeping animals in health and preventing diseases.

On completion of the Senior year the student has not only the theoretical knowledge, but some of the most practical methods of applying such knowledge. The transition from the student to the practitioner presents little difficulty after such training.

Description of Studies

313, 323, 333. **Medicine.** Methods employed in the diagnosis of animal diseases and a consideration of diseases not widely spread. Prerequisites Vet. Anat. 130, 131, 232; Vet. Path. 210, 220, 223, 233; Vet. Phys. 211, 221, 231. Fall, Winter, and Spring respectively. Rec. 4; lab. 1, 3 hr.; credit 5 each quarter; fee $2.50 the fall quarter.

314, 324, 334, 413, 423, 433. **Clinics.** From one to three P. M. each day of the week except Sunday, clinics are held in the Veterinary Hospital.

412, 422, 432. **Medicine.** Infectious diseases; their diagnosis, and methods of control; general sanitation and hygiene. Prerequisies 313, 323, 333; Vet. Phys. 326; 336; Vet. Path. 310; Vet. Surg. 327, 337. Fall, Winter, Spring respectively. Rec. 4; credit 4 each quarter.

VETERINARY PATHOLOGY

Professors Benbrook, Murray, Pathology Building, Veterinary Group, Room 113
Associate Professor Rice, Room 112

Instructor Jacobi

For information concerning the Division of Veterinary Medicine, see page 54.

The Department of Veterinary Pathology and Bacteriology occupies the northeast building of the veterinary group. Two offices open directly into a private laboratory that is used by those in charge to investigate problems pertaining to their lines of work. A large general student laboratory facing the north, east, and west is well lighted and supplied with individual equipment for a section of thirty students. A pathology preparation room, a bacteriology preparation room and a room-incubator open into the main laboratory. A class lecture room to accommodate fifty students is equipped with a combination lantern-slide, microscopic projection, and photomicrographic machine. In the basement are six rooms for the housing of small experimental animals, for the preparation and mounting of museum specimens, and for storage of supplies, and a large storage room for museum specimens used by the department.

The work of the department consists of a systematic study of the

causes of disease and the manner in which these causes bring about alterations in the anatomical structure and chemical and physiological activities of animal tissues. The application of this study renders diagnosis more accurate and forms the foundation for rational therapeutics.

Description of Studies

210, 220. **General and Pathogenic Bacteriology.** Morphology classification, cultivation, and physiologic characters of bacteria. Principles of infection and immunity. Fall and Winter respectively. Rec. 2; labs. 2, 3 hr.; credit 4; fee $2.50 each quarter.

223, 233. **General Pathology.** The causes of disease and their effects upon the anatomical and chemical relations and physiological activities of the body. Prerequisites 210, 220, Vet. Anat. 130, 131. (223) Winter. Lect. 2; credit 2. (233) Spring. Lect. 3; labs. 2, 2 hr.; credit 4½; fee $4.00.

310. **Special Pathology.** Etiology, pathogenesis, lesions and results of disease in organs or systems of organs; also specific infectious diseases. Prerequisite 233. Fall. Rec. 4; lab. 1, 3 hr.; credit 5; fee $5.00. Professor Benbrook.

325. **Animal Parasites.** Classification, life history, and effect produced by the principal internal and external parasites of domestic animals. Prerequisite Zool. 1b. Winter. Rec. 3; lab. 1, 3 hr.; credit 4; fee $2.00.

338. **Immunity and Serum Therapy.** Theories of immunity and immunization; preparation of bacterins, vaccines, and antisera; serum tests in the diagnosis of disease. Prerequisite 220. Spring. Rec. 3; labs. 1, 3 hr.; credit 4; fee $3.00. Professor Murray.

416. **Post Mortem Pathology.** Application and technique of autopsies with discussion of reports on cases autopsied in coöperation with the Departments of Medicine and Surgery. Prerequisite 310. Fall. Rec. 1; credit 1.

430. **Food Hygiene.** Designed to meet the requirements of federal, municipal and rural meat inspection; also milk and dairy inspection and hygiene. Prerequisite 310. Spring. Rec. 3; credit 3.

634. **Livestock Sanitation and Disease.** (For Agricultural students.) Prerequisite Bact. 3. Spring. Rec. 3; credit 3.

635. **Poultry Parasites, Diseases and Hygiene.** (For Poultry Husbandry students.) Spring. Rec. 2; credit 2.

715. **Research in Pathology.** (For students of the Graduate College.) Prerequisite 310 or equivalent. Professor Benbrook.

716. **Research in Bacteriology.** (For students of the Graduate College.) Prerequisite 220 or equivalent. Professor Murray; Associate Professor Rice.

Autopsies. Conducted in coöperation with the Departments of Surgery and Medicine and supplementary to Vet. Path. 310, 416 and all phases of clinical work.

VETERINARY PHYSIOLOGY AND PHARMACOLOGY

PROFESSOR BERGMAN, Physiology Building, Veterinary Group, Room 100
Instructors Dukes, Judisch; Fellow Yarborough; Student Assistant Smith

For information concerning the Division of Veterinary Medicine, see page 19.

The southeast building of the Veterinary group is devoted to work in Physiology, Pharmacy, Materia Medica, and Therapeutics. This building was planned for the investigation and teaching of physiological and pharmacological subjects, and is admirably arranged and equipped for the pursuance of general or research work along these lines.

In the general laboratories, students are provided with individual equipment as far as possible, and thus self reliance and individual responsibility are developed. The laboratories have been newly equipped and are thoroughly up-to-date. The latest apparatus for practical physiological, pharmacological, or pharmaceutical demonstration and laboratory work is available.

Before attempting a proper conception of diseased conditions it is necessary to have an understanding of the normal functions of the body

structures. The purpose of the work in Physiology is to make a detailed study of the normal functions and activities of the cells, tissues, organs, and systems constituting the animal body. The work is presented in the form of lectures, recitations, demonstrations, and practical laboratory work in which the chemical and physical processes of the animal body are considered in logical order. The lecture work is supplemented by the use of dissected specimens, practical demonstrations, and drawings. The laboratory work is devoted to the study of the respiratory, circulatory, muscular, and nervous systems; also digestion and absorption, and the circulating fluids of the body.

As Pharmacy and Materia Medica are prerequisite to Therapeutics, these subjects are considered in the order named; the work is presented as lectures, recitations, laboratory, and demonstration work.

Description of Studies

211, 221, 231. **Comparative Physiology.** Physiology of blood, lymph; circulatory, respiratory, muscular, and nervous systems; digestion, absorption, metabolism, secretion, excretion, ductless glands, nutrition. Fall, Winter, and Spring respectively. Lect. and rec. 3; lab. 1, 3 hr.; credit 4; fee $1.50 each quarter.

311. **Pharmacy.** Processes and principles, official drugs and chemicals; their solubility and incompatibility. Preparation of official preparations. Prescription writing and pharmaceutical arithmetic. Fall. Rec. 2; lab. 1, 2 hr.; credit 2⅔; fee $1.50.

312. **Materia Medica.** Definitions and discussions of the composition of drugs, classifications, official preparations, incompatibilities, combinations, and the forms of administration. Fall. Rec. 3; credit 3.

326, 336. **Therapeutics.** Modes of action of drugs; their absorption, elimination, dosage, indications, and contra indications for use; methods and time of administration. Prerequisites 211, 221, 231, 311, and 312. Winter and Spring respectively. Credit 3 and 4.

533. **Advanced Therapeutics.** Selected work especially arranged to meet the needs of Senior veterinary students planning upon entering active practice. Prerequisite 326 and 336. Spring. Lect. 1; credit 1.

611. **Comparative Physiology.** (For Agricultural students.) Physiology of the blood, lymph, circulatory and respiratory systems, ductless glands, digestive tract, and organs of elimination. Prerequisite Vet. Anat. 610. Fall. Lect. and rec. 3; credit 3.

710, 711, 712. **Comparative Physiology.** (For Agricultural students.) Minor work for graduate students in agriculture, doing major work in general nutrition, production problems, animal feeding, breeding, etc. Credit 3 or 5 as arranged. Fall, Winter, and Spring respectively. Professor Bergman.

715. **Research in Physiology.** Research in physiological subjects relative to veterinary science. Professor Bergman.

VETERINARY SURGERY

Professor Bemis, Administration Building, Veterinary Group, Room 108
Associate Professor Guard; Pharmacist and Hospital Assistant Anderson

For information concerning the Division of Veterinary Medicine see page 19.

The Department of Surgery is especially well equipped for its teaching. The hospital is 160 feet long by 60 feet wide; has a stall capacity for 42 large animals, 22 dogs, and other small animals, and contains three operating rooms. The largest, 65 by 30 feet, is used for examining animals as they are admitted, and for minor operations and treatment. Joining it is a clinical amphitheatre; next to this is the second operating room for large animals, equipped with an hydraulic operating table, X-ray apparatus, and other conveniences. Between the operating room and clinic room is a dispensary and instrument room. On the upper floor,

near the kennels, is a small animal operating room equipped with white enamel furniture; also operating instruments and modern steam sterilizers for water, instruments, and dressings.

During the school year more than eight thousand cases, including a wide range of surgical conditions, are operated upon and treated in the clinics, each case being assigned to a Senior student with one or more Junior assistants. All operations are performed by the professors in charge, and the after treatment is always under their direction, the idea being that the clinical cases are in no way experimental, but that they shall be treated as similar cases are to be treated later in practice.

All the class room work in surgery is conducted in the amphitheatre in the hospital building, where animals affected with conditions under discussion as well as instruments and apparatus to be used in diagnosis, treatment, or restraint, can be brought before the class. Clinic cases are constantly used to correlate the theoretical and the practical.

Description of Studies

314, 324, 334. **Clinics.** Students are required to assist in daily examination and treatment of hospital cases, in compounding prescriptions and in post mortem examinations. Prerequisite same as 327. Fall, Winter, and Spring respectively. Labs. 6, 2 hr.; credit 3 each quarter.

327, 337. **General Surgery.** Class room instruction supplemented by clinical instruction in the principles of surgery, surgical technique and lameness. Prerequisite first two years of Vet. Course. (327) Fall. Rec. 3; credit 3. (337) Prerequisite 327. Winter. Rec. 3; credit 3.

411, 421, 431. **Special Surgery.** A study of the surgical diseases of the various regions of the body, including dentistry and principles of horseshoeing. Prerequisite 337. Spring, Fall, and Winter respectively. Rec. 4; lab. 1, 3 hr.; credit 5; fee $4.00 each quarter.

413, 423, 433. **Clinics.** Students act as assistants to the clinical professors in the actual treatment of clinical cases, and in post mortem examinations. Prerequisite 334. Fall, Winter and Spring respectively. Labs. 6, 2 hr.; credit 4 each quarter.

414. **Obstetrics.** Principles and practice of obstetrics. Especial attention given to the subject of sterility. The clinics furnish many actual cases. Prerequisites Vet. Anat. 232, Vet. Phys. 231, and Zool. 202. Fall. Rec. 4; credit 4.

633. **Obstetrics.** (For Agricultural students.) A study of reproduction, sterility, hygiene of pregnant animals, and care of new born animals. Prerequisites Zool. 201, Vet. Anat. 610, and Vet. Phys. 611. Spring. Rec. 1; credit 1.

717. **Research in Surgery.** Special problems connected with surgical conditions, surgical technique, and sterility of animals. Labs. 2 or 3, 3 hr.; credit 2 or 3. Professor Bemis.

Note—Common Unsoundnesses of the Horse. (For Animal Husbandry students.) Lectures and demonstrations given in conjunction with Vet. Anat. 610. Fee $.50.

VETERINARY INVESTIGATION

Raymond A. Pearson, LL. D.....President
C. H. Stange, D. V. M.....Director
Chas. Murray, B. S., D. V. M.....Professor
S. H. McNutt, D. V. M.....Assistant Professor
Paul K. Purwin .....Laboratory Assistant

The department is being supported by special appropriations made by the legislature, and laboratories and experimental animal rooms are equipped for this special work. There are but few animal diseases entirely understood, and many are understood in no particular. It is the object of this department to investigate such diseases with the view of working out some method by which they can be controlled or eradicated.

One feature of the work of this department is the diagnosis of disease

by laboratory methods and examination of tissues. Veterinarians and livestock owners are encouraged to send to the laboratory tissues and materials from doubtful cases. Careful and painstaking examination of these is made, and animal inoculations are carried out for those cases which promise something new or rare. Reports of such examinations are submitted to the sender, and his coöperation is solicited in working out the cases. Accurate records of such work are kept on file in the laboratory and are available to members of the Veterinary Division at all times for their study and use. Thus the work of the department supports the instruction work and assists in keeping such instruction modern.

VETERINARY MEDICAL SOCIETY

The Veterinary Medical Society is an organization of veterinary students. Two meetings are held each month and topics relating to veterinary medicine are discussed. All veterinary students become members and much benefit is derived along literary, social, and professional lines.

ANIMAL HUSBANDRY

PROFESSOR KILDEE, Agricultural Hall, Room 103

121. **Market and Breed Types of Beef and Dual-Purpose Cattle.** (Veterinary students.) Judging. Fall. Rec. 1; labs. 2, 2 hr.; credit 2 1-3; fee $2.00.

122. **Market and Breed Types of Sheep and Horses.** (Veterinary students.) Similar to 121. Winter. Rec. 1; labs. 2, 2 hr.; credit 2 1-3; fee $2.00.

123. **Market and Breed Types of Dairy Cattle and Hogs.** Similar to 121. Spring. Rec. 1; labs. 2, 2 hr.; credit 2 1-3; fee $2.00.

241. **Animal Feeding.** Composition and digestibility of feeding stuffs; preparation; feeding standards and calculation of rations. Prerequisite Chem. 551, 751, or 821. Spring. Rec. 3; credit 3. Assistant Professor Anderson.

251 **Principles of Breeding.** Physical basis of heredity; Mendelism; live stock breeding. Prerequisites 111, 112, 113, or 121, 122, 123. Winter. Lectures 3; credit 3. Professor Shearer.

CHEMISTRY

PROFESSOR COOVER, Chemistry Building, Room 202

511. **General Chemistry.** (Veterinary students.) Principles and the more important elements, including the preparation of some of their compounds. Fall. Rec. 5; lab. 5 hr.; credit 6⅔; deposit $10.00.

821. **Applied Organic Chemistry.** (Veterinary students.) Attention given to organic compounds of biological importance. Prerequisite 511. Winter. Lect. 2; rec. 1; labs 2, 3 hr.; credit 5; deposit $12.50.

822. **Physiological Chemistry.** (Veterinary students.) Chemistry of the animal body; digestion; metabolism; nutrition. Prerequisite 821. Spring. Lect. 2; rec. 1; labs. 2, 3 hr.; credit 5; deposit $12.50.

DAIRYING

PROFESSOR MORTENSEN, Dairy Building, Room 9

66. **Milk Inspection.** Testing of milk and cream by the Babcock methods. Inspection of milk and milk products. Spring. Rec. 1; lab. 1, 3 hr.; credit 2; fee $1.50.

ECONOMIC SCIENCE

Applied Economics and Social Science

PROFESSOR BRINDLEY, Central Building, Room 317

231. **Veterinary Law.** Legal rights, responsibilities and liabilities of veterinarians in private practice, and in official capacity. Winter. Rec. 3; credit 3.

ENGLISH

PROFESSOR NOBLE, Central Building, Room 18

301a, 301b. **Composition.** (301a) Fundamental principles. Daily themes; ease and correctness in sentence and paragraph. (301b) Written and oral composition, including business letters. Winter and Spring, respectively. Rec. 2; credit 2 each quarter.

LIBRARY

ASSISTANT LIBRARIAN, MISS RUSH, Central Building, Room 112

Veterinary Library, Veterinary Building. This book collection includes works on zoology, bacteriology, medicine, veterinary surgery, veterinary anatomy, veterinary physiology, and veterinary pathology. About one-fourth of the current periodicals are French and German.

PHYSICAL TRAINING

PROFESSOR MAYSER, Gymnasium, Room 202

10a, 10b, 10c. **Physical Training.** Floor Tactics. Calisthenics. Gymnastics. Swimming. Outdoor and Indoor Games and Athletics. Efficiency Lectures. First Aid. In both 10a and 10c six hours are devoted to lectures (Hyg. 10a and Hyg. 10c) by the department of Hygiene. Fall. Winter, and Spring respectively. Labs. 2, 1 hr.; required; fee $1.00 each quarter.

11a, 11b, 11c. **Physical Training.** Advanced Work. Prerequisite 10c. Fall, Winter, and Spring respectively. Lab. 1, 1 hr.; required; fee $1.00 each quarter.

PUBLIC SPEAKING

PROFESSOR SHATTUCK, Central Building, Room 311½

30. **Extempore Speech.** The fundamental principles of speech organization and delivery. Fall, Winter, or Spring. Rec. 2 or 3; credit 2 or 3.

ZOOLOGY AND ENTOMOLOGY

PROFESSOR GUTHRIE,* Science Building, Room 313

1A, 1B, 1C. **General Zoology.** A general survey of the animal kingdom together with a discussion of the more important biological laws.

C. For students in Veterinary Medicine. Emphasis laid on the principles of development. (1aC) Fall. Rec. 2; lab. 1, 3 hr.; credit 3; fee $2.00. (1bC) Winter. Rec. 2; lab. 1, 2 hr.; credit 2⅔; fee $2.00.

202. **Embryology.** (Veterinary students.) Vertebrate development, mainly bird and mammal. Emphasis on histogenesis, mammalian development and fetal membranes. Prerequisites, General Zoology. Spring. Lect. 2; lab. 1, 3 hr.; credit 3; fee $2.50.

MILITARY SCIENCE AND TACTICS

PEARL M. SHAFFER, Col. Inf., U. S. A.

HERMAN S. DILWORTH, Major, Cav., U. S. A.

J. K. BOLES, Major, F. A., U. S. A.

EARL E. GESLER, Major, C. of E., U. S. A.

SOLON B. RENSHAW, 1st. Lt. V. C., U. S. A.

JAMES RUSH LINCOLN, Professor.

Under the provisions of the National Defense Act the College has secured the authorization and establishment of four units of the Reserve Officers' Training Corps: Infantry, Field Artillery, Engineers, and Veterinary. The primary object of establishing R. O. T. C. units at certain selected educational institutions is to qualify by systematic and standard

methods of training, students at civil educational institutions for reserve officers. The system of instruction prescribed presents to these students a standardized measure of that military training which is necessary in order to prepare them intelligently for the duties of commissioned officers in the military forces of the United States. The aim of the course is not only to make of the student a well trained soldier, able to fulfill his military obligations in the time of emergency, but to qualify him as a competent leader and instructor of others.

The four-year course leading to a commission is divided into two parts. The first two years is known as the Basic Course and the last two years the Advanced Course. The Basic Course is required by the College as a prerequisite to graduation of all physically fit male students excepting those who are not citizens of the United States or who are members of the army, navy, or marine corps. Upon the successful completion of the Basic Course the student may be enrolled in the Advanced Course, provided his application is approved by the Professor of Military Science and Tactics and the President. Members of the Reserve Officers' Training Corps will have their uniforms furnished by the Government. All other students will receive information as to prices from the commanding officer of the military department.

Advanced Course in the R. O. T. C. In the Junior and Senior years of each collegiate course of study given in the catalogue, certain subjects are marked with a dagger (†). If a student is appointed to the Reserve Officers' Training Corps, he may omit all or part of the subjects thus marked, in each quarter, provided that in omitting these subjects he does not omit more credit hours than the Reserve Officers' Training Corps requires of him for the same quarter. If the omitted subjects would exceed the number of hours required for the Training Corps, an elective must be taken which will bring the total number of hours for the quarter up to the requirements specified for that quarter in that course of study.

Those who wish to enter the service as Veterinarians should enroll in the course in Veterinary Medicine.

51a, 51b, 51c. Military fundamentals, Animal Sanitation and Equipment, Equitation, Organization. Fall, Winter and Spring. Lecture 1; Drills 2; Credit 1 each quarter.

52a, 52b, 52c. Drill, Organization and Equipment, Animal Sanitation, Administration, Courts-Martial. Field Service Regulations. Fall, Winter and Spring. Lecture 1; Drills 2; Credit 1 each quarter.

53a, 53b, 53c. Drill, Equitation, Veterinary hospitals, Organization, Map making and Reading, Veterinary Medicine and Surgery. Fall, Winter and Spring. Lecture 2; Drill 1; Credit 2 each quarter.

54a, 54b, 54c. Drill, Shoeing, Medicine and Surgery, Sanitation, Field Service Regulations, Military Law, and Rules of Land warfare. Organization. Fall, Winter and Spring. Lectures 2; Drill 1; Credit 2 each quarter.

General Information

ADMINISTRATION

The laws of the United States and State of Iowa provide for the scope and the management of the State College of Agriculture and Mechanic Arts. It is under the State Board of Education, which consists of nine members nominated by the Governor and confirmed by the Senate. This Board appoints a finance committee consisting of three men who give their entire time to the management of the five state educational institutions of Iowa, of which the Board is in charge, under provision of the law and such rules and regulations as the State Board of Education may prescribe.

GOVERNMENT

The character of the College buildings and the nature of the work make order, punctuality, and systematic effort indispensable. The institution offers no inducement to the idler or the self-indulgent. All who are too independent to submit to needful authority, too reckless to accept wholesome restraint, or too careless to take advantage of their opportunities, are advised not to come. The discipline of the College is confined mainly to sending away those who prove, on fair trial, to be of this class. The final decision of all cases of discipline rests with the President of the College except when he delegates such power in particular cases to the deans or to some one of the standing committees of the faculty.

HISTORY

An act establishing "A State Agricultural College and Model Farm" to be connected with the entire agricultural interests of the state was passed by the legislature of Iowa in 1858. This legislature also appointed a board of commissioners to buy a farm and erect a college building, and selected a board of trustees to secure a faculty and organize a college. In 1859 a farm of six hundred and forty acres situated near Ames, was purchased.

In 1862 Congress enacted, and President Lincoln signed a bill entitled, "An act donating public lands to the several States and Territories, which may provide colleges for the benefit of Agriculture and the Mechanic Arts."

Section 1 of this act provides that for the support of such colleges there be granted "an amount of public land, to be apportioned to each State in quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of 1860."

Section 4 requires: "That all moneys derived from the sale of land shall constitute a perpetual fund, the capital of which shall remain forever undiminished, and the interest of which shall inviolably be apportioned by each State which may take and claim the benefit of this act,

to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislature of the State may provide, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.''

The General Assembly of Iowa, September 11, 1862, accepted the grant upon the conditions and under the restrictions contained in the act of Congress, and by so doing entered into contract with the General Government to erect and keep in repair all buildings necessary for the use of the College. By action of the General Assembly the College was changed from an agricultural institution into a College of Agriculture and Mechanic Arts with the broad and liberal course of study outlined in the following paragraph. The College was formally opened on the seventeenth day of March, 1869.

In 1884 the General Assembly passed an act defining the course of study to be pursued as follows: ''Section 1. That Section 1621 of the Code is hereby repealed and the following is enacted in lieu thereof: 'Section 1621. There shall be adopted and taught in the State Agricultural College, a broad, liberal and practical course of study, in which the leading branches of learning shall relate to agriculture and the mechanic arts and which shall also embrace such other branches of learning as will most practically and liberally educate the agricultural and industrial classes in the several pursuits and professions of life, including military tactics. Section 2. That all acts and parts of acts inconsistent with this act are hereby repealed.''

August thirtieth the following act was approved by President Harrison: ''Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, that there shall be and hereby is, annually appropriated, out of any moneys in the treasury not otherwise appropriated, arising from the sales of public lands, to be paid, as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may hereafter be established, in accordance with an act of Congress approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language and the various branches of mathematical, physical, natural and economic sciences, with especial reference to their application in the industries of life, and to facilities for such instruction.''

The income of the College from national and state sources is therefore expended in instruction, experimentation, and illustration in agriculture and in the mechanic arts, and in the underlying and related sciences and literature. All buildings are erected and all repairs thereon are made by the State of Iowa.

The college property is valued at $4,962,253.28.

LOCATION

The College occupies a delightful and healthful location upon high, rolling land in the west part of Ames, Story County. Situated at the junction of the north and south branch and the main double track line

of the Chicago & Northwestern Railroad, and connected with all the trunk lines of Iowa, Ames is easily accessible from all parts of the state. An electric railway connects Ames and the College. The Fort Dodge, Des Moines and Southern Railway (electric) with stations on the campus gives efficient service to the College and connections with the following trunk lines: At Fort Dodge, with the Illinois Central and Chicago-Great Western; at Huxley, with the Chicago, Milwaukee & St. Paul; at Des Moines with the Chicago, Rock Island & Pacific, the Chicago Great Western, and the Chicago, Burlington & Quincy.

Ames is a most desirable town for wholesome college influences. Its people are thrifty, enterprising, and cordial. The town has an excellent system of public schools, numerous churches, waterworks, and electric lights, and it also has a good city government. It is an inviting community for heads of families who wish to educate their children and enjoy a good environment at a reasonable expense. Ames and the College are on very cordial terms, and the citizens of Ames seek to promote the efforts of the students and the highest interests of the College.

GROUNDS

Of the entire College domain of 1,598 acres, 125 acres are set apart for College grounds. These include the experimental plots, the young forestry plantations, the surroundings of professors' dwellings, and the central campus with its beautiful walks and drives, its trees, shrubbery and flower gardens, and its large and stately buildings. The true principles of landscape gardening have been so faithfully observed in the gardening and in the location of buildings and drives as to make the entire campus a large and beautiful park.

BUILDINGS

Fifty-seven commodious buildings besides the dwelling houses and the buildings for farm stock, machinery, and work, have been erected by the State for the exclusive use of the various departments of the College. All of these buildings are heated by steam, lighted by electricity, and supplied with pure water.

The following is a summary of the property, including the buildings belonging to the College:

Inventory for July 1, 1921

Real Estate	$ 399,377.31
Buildings	3,202,953.64
General Equipment	370,738.30
Scientific Equipment (including Livestock) and Furniture, Collegiate and Non-collegiate Departments and Experiment Stations	829,184.03
Supplies for Collegiate and Non-collegiate Departments and Experiment Stations (Estimated)	160,000.00
Total (Est.)	$4,962,253.28

EMPLOYMENT FOR STUDENTS

Although this institution is not situated in a large center where there is an unlimited amount of employment for students, yet there are a large number who can earn a part of their expenses here at College. Very few are able to make all their expenses, and no young man should come expecting to do this unless he has made definite arrangements previous to his coming.

The work available for students consists of employment in the various departments, such as office work, caring for stock, helping in dairy, greenhouses, orchards, shops, or janitor work about the buildings. Considerable work for students is also obtained in the business houses and homes of Ames; a limited number find employment in student clubs and in the cafeteria.

The Employment Bureaus are managed as follows: For men, by the Young Men's Christian Association. Regular work for women, Miss Harwood, Dean of women; odd hour jobs for women, the Young Women's Christian Association. The heads of various departments are able to secure employment for large numbers of students during the summer vacation. Such positions give the students practical work that is closely related to the instruction given in college, and thereby strengthens them for service after graduation.

During the present year several hundred students have found work through the Association Employment Bureaus. It is suggested that, on account of the heavy laboratory work required in the courses here, students should not come expecting to put in too much time in labor. Facts regarding opportunity for work at the College can be had by writing Secretary, Y. M. C. A., or Secretary, Y. W. C. A., or Miss Hazel Harwood, Dean of Women.

Manual Labor

The following regulations in regard to manual labor have been adopted by the Board of Education.

1. The manual labor of students is divided into two kinds; uninstructive labor, which shall be paid for in money; and instructive labor, which shall be compensated by the instruction given and the skill acquired.

2. Uninstructive labor shall comprise all the operations in the workshop, the garden, upon the farm, and elsewhere, in which the work done accrues to the benefit of the College, and not to that of the student. Instructive labor shall embrace all those operations in the workshop, museum, laboratories, veterinary hospital, experimental kitchen, gardens, experimental stations, and on the farm,—labor in which the sole purpose is the acquisition of knowledge and skill.

3. Students shall engage in instructive labor in the presence of the professor in charge, and under his instruction according to the statement made in each of the courses of study.

The compensated labor furnished by the division of Agriculture, of Veterinary Medicine, and of Engineering, is given by each to its own students and is eagerly sought. Compensated labor is awarded to the most faithful and meritorious students in each department. This labor is paid for according to its value to the College, but no student should expect to pay the main part of his expenses by labor while here. The College cannot furnish the work and, even if it could, the student's time is needed chiefly for study. Still, many worthy and industrious students pay a considerable part of their expenses by labor; over $25,000 is paid out by the College thus each year to students and graduate assistants.

HOSPITAL

Sanitary conditions surrounding the College are excellent. The buildings are situated on high ground with good natural drainage. The water supply is exceptionally pure and abundant. The sewer system and sewage disposal plant are the best that modern sanitary engineering can devise. Nevertheless in this, as in other like institutions, where students are drawn from a wide territory, various diseases are brought by the students themselves. In order to control epidemics and properly care for other cases of illness or injury, a hospital is provided. A new hospital of 45 beds capacity with a large dispensatory and all modern conveniences has been constructed. In connection with this is the old hospital of 18 beds for special cases. This hospital is under the charge of the Department of Hygiene. There are three physicians, a head nurse with the necessary number of assistant nurses, and other employees necessary for the operation of a completely equipped, modern hospital.

The expenses of the hospital are defrayed from a fund accruing from the fees paid by students. A portion ($2.) of the full incidental fee of $6. per quarter is apportioned for hospital charges and the privileges of the hospital and dispensary are extended to all students paying this fee, providing that the physicians shall be paid for calls at their residences. Persons not making the deposit will be admitted to the hospital upon the basis of a charge of $21.00 a week, within the discretion of the College physicians. All students who pay the full regular fee are insured medical attendance, nursing, and medicine, in illness or accident; and consultation and medicine for minor ailments in accordance with the regulations herein published. The charges named are based upon the probable actual cost of medical attention and hospital service, and the fund created is carefully devoted to these purposes. The College cannot assume any liability beyond the extent of the fund so created. The hospital has proved to be a great blessing to the students.

The following regulations apply to the privileges of the hospital:

1. Students entering the hospital shall be charged $8.50 a week ($1.25 per day) for board, room, light, and heat. But for any time in excess of three consecutive weeks spent in the hospital, a charge shall be made of $1.50 per day.
2. In case a special nurse or physician is employed, the expense shall be borne by the particular patient, the selection of such nurse or physician to be approved by the President of the College and the College Physicians.
3. The College assumes no responsibility whatever in case of smallpox; nor shall the privileges of the hospital be extended to such cases.
4. The President and the College Physicians may require of students entering the College a certificate of a reputable physician showing successful vaccination. On account of prevalence of smallpox in some localities in the United States, it is strongly urged that all students entering Iowa State College be vaccinated before leaving home. This is recommended in order that valuable time may not be lost during the college year by the necessity of being vaccinated.
5. The College physicians are authorized to exclude from the dormitories and recitation rooms any person afflicted with a contagious disease.

ALUMNI ASSOCIATION

The Alumni Association of the Iowa State College was organized in 1876. Its purpose is to promote the highest interests of the institution and to increase friendship and sympathy among students and alumni.

The present officers of the association are:
President, M. J. Riggs, '83, Toledo, Ohio.
Vice-President, Mark G. Thornburg, '10, Emmetsburg, Iowa.
Recording Secretary, Katherine (Goble) Gray, '99, Ames, Iowa.
Treasurer, Herman Knapp, '83, Ames Iowa.
General Secretary, Ward M. Jones, '97, Ames, Iowa.

The annual meeting and banquet is held commencement week. A local association was organized at Ames in April, 1903, in order to arrange the annual meetings and to keep the local alumni in touch with one another.

Active local branches of the general association exist in Southern and Northern California, Washington, D. C., Pittsburgh, Chicago, Spokane, Seattle, Minneapolis and St. Paul, Omaha, New York City, Kansas City, Detroit, Cleveland, Fargo, N. D., and Brookings, S. D.; in the state, at Des Moines, Sioux City, Davenport, Cedar Rapids and in several counties.

The Alumnus, the official organ of the association, appears monthly except in August and September. It is under the supervision of the general secretary.

The offices of the association are on the second floor of Alumni Hall, where all alumni and ex-students will find a hearty welcome.

STUDENT PUBLICATIONS

The Iowa State Student is a tri-weekly newspaper published by a staff appointed from the student body and devoted to the news of the College.

The Iowa Agriculturist is an agricultural monthly magazine published by the students of the Agricultural Division, in coöperation with the Department of Agricultural Journalism.

The Iowa Engineer is published monthly by the students of the Engineering Division.

The Iowa Home Maker is a home magazine published monthly by the students of the Home Economics Division.

The Bomb is an annual published by the Junior class.

PUBLIC SPEAKING COUNCIL

The Public Speaking Council is an organization composed of three faculty members recommended by the President of the College and appointed by the Board of Education; and one representative from each of the eight literary societies, the sophomore, the junior, and the senior classes, and the Dramatic Club. The Council promotes and manages all dramatic and public speaking activities at Iowa State College. These activities include intersociety and intercollegiate debates, dramatic, oratorical, and extempore speaking contests, joint literary society programs, literary society graduation exercises, and all class plays.

Teams of three members from each of the societies meet in two series of debates during the fall quarter. In the spring the successive winners meet in the semi-final and final debates for the Kennedy cup. The final winners are awarded the cup for one year, and the name of their society is inscribed upon it. This series of debates offers excellent training for the inter-collegiate debates. Iowa State College is a member of three debating leagues. In the fall two debating teams of three students meet Kansas Agricultural College; in the spring, Purdue University, Michigan Agricultural College, Wisconsin and Minnesota.

There is a growing interest in extemporaneous speaking in Iowa State College. The members of the faculty have donated to the Council a trophy to be awarded annually to the winner of the extempore speaking contest.

The sophomore, junior, senior, inter-literary society, and dramatic club plays offer training in dramatics to a great many students. The funds from these plays pay a large part of the expenses of public speaking events.

LITERARY SOCIETIES

The work of the eight literary societies serves not only to supplement the social and literary work of the College, but also to aid the student in securing that training so necessary to enable him to appear before an audience, that training which every student needs and which cannot be secured in the class room alone. Every student is invited, even urged, to join one of these societies.

LECTURES AND ENTERTAINMENTS

The following addresses and other entertainments were given at the college during the calendar year, 1921:

January 8—Mr. A. H. Carhart, Landscape Recreational Engineer, U. S. Forest Service. Topic: "Our National Forests." Illustrated with motion pictures.

January 11—Mr. Arthur Rugh, a missionary from China. Topic: "What Next in China?"

January 17—Mr. Harry S. Warner, General Secretary of the Intercollegiate Prohibition Association. Topic: "World Civic Reform."

January 20—Mr. Edward T. Devine, of New York City. Topic: "The Three R's: Reaction, Revolution, Reconstruction."

January 24—Mr. Douglas Malloch, President of the American Press Humorists. Topic: "Philosophy of an Optimist."

February 4—4:15 p. m. Fredrick Monsen, Pasadena, California. Topic: "Norway." (Illustrated.)

February 4—8:00 p. m. Fredrick Monsen. Topic: "The Natural Wonders of the Great Southwest." (Illustrated.)

February 5—Fredrick Monsen. Topic: "The West Indies." (Illustrated.)

February 15—Jessie B. Rittenhouse, New York City. Topic: "The Modern Movement in Poetry."

February 17—John M. Parker, ex-governor of Louisiana. Topic: "Progress in the South."

February 18—Homer T. Hulbert, Korea. Topic, 4:15: "A Yank in the Far East." Topic, 8:00: "The Firing Line of American Commerce."

February 22—Signora Olivia Rossetti Agresti, of Italy. Topic: "The International Institute of Agriculture."

February 23—Mrs. Kate Upson Clark. Topic: "Solomon vs. the Modern Woman."

February 24—Professor Stephen W. Gilman, University of Wisconsin. Topic: "Business Engineering."

February 25, 26, 27—Sherwood Eddy. Evangelistic meetings.

February 28—Dr. Hollis Dann, Music Director at Cornell University. Topic: "Musical Training in Connection with a College Course."

March 1—Lucine Finch. Topic: "Her Mammy's Stories."

March 8—Edwin Markham. Topic: Readings from his Poems, with Glints of Gravity and Gayety.

March 14—Governor Kendall. Convocation Address.

March 19—Grinnell Dramatic Club. "The Terrible Meek", by Charles Rann Kennedy.

April 7—Ex-Secretary William C. Redfield of the U. S. Dept. of Commerce. Topic: "Mechanical Developments of War Times."

April 21—L. O. Armstrong, Bureau of Commercial Economics. Topic: "Old French Canada." Illustrated.

April 22—L. O. Armstrong. Topic: "Labrador to Alaska."

April 22—H. Foster Bain, Chief of U. S. Bureau of Mining. Topic: "Industrial Opportunities in China."

April 26—Charles "Sandy" Chapman of Boston. Topic: "War Time Experiences of Knights of Columbus Welfare Workers in France."

October 14—Zona Gale. Topic: "Readings from Friendship Village Stories."

October 19—George McManus, Cartoonist. A Cartoon Talk.

October 24—Rev. S. H. Littell, Missionary, Hankow, China. Topic: "America and China."

October 25—Tony Sarg's Marionettes. "Rip Van Winkle" and "A Night at Delhi."

October 27—Dr. H. B. Ward, University of Illinois. Topic: "Fish Culture as Related to the Development and Maintenance of the Salmon Industry."

October 28—Edwin A. Cooper, Hawaii. Topic: "Hawaii in Scene and Story."

October 31—Hon. J. W. Kime, Fort Dodge. Topic: "The Proposed Court for the Settlement of Industrial Disputes."

November 4—Vachel Lindsay, Springfield, Illinois. Topic, 4:15: "The Higher Vaudeville, with Orthodox Verse as Well." Topic, 8:00: Readings from "The Gospel of Beauty."

November 8—Fred B. Smith. Convocation Address.

November 10—Edward Abner Thompson, of Boston. Reading "Abraham Lincoln."

November 14—Mrs. Kate Upson Clark, New York City. "The Humor of Jane Austen."

November 15—Mrs. Kate Upson Clark, New York City. "What is a Patriot?"

November 16—Mrs. Kate Upson Clark, New York City. "Can Personality be Acquired?"

November 19—Mme. Marie-Lydia Standish and Emma Menke. Topic: "Medieval Legends and Story-Songs in Poetry and Music."

November 23—B. R. Baumgardt, of California. Topic: "The Romance of Civilization."

November 22—B. R. Baumbardt, of California. Topic, 4:15: "Rebuilding the Temple of Civilization." Topic, 7:00: "The Frontiers of the Universe."

November 25—Dean Henry Noble Sherwood, Franklin College, Indiana. Topic: "Our Debt to England."

November 29—Edward Abner Thompson, of Boston. Topic: "Typical American Humor."

December 2—John A. Lomax, of Austin, Texas. Topic: "The Songs of the Cowboys."

December 3—Mr. and Mrs. Michitaro Ongawa. "A Program of the Far East."

December 5—Senator William S. Kenyon. Convocation Address.

December 6—Henry S. Curtis, Oberlin, Ohio. Topic: "Education through Play."

December 8—John T. Frederick, Iowa City. Topic: "American Literature in the Middle West."

December 9—C. W. Barron, Editor Wall Street Journal. Convocation Address.

RELIGIOUS LIFE AT THE COLLEGE

Orange Howard Cessna, Chaplain

Fred M. Hansen, General Secretary, Y. M. C. A.

Angeline McKinley, General Secretary, Y. W. C. A.

The college life is permeated with religious influences. The following are among the more evident moral and religious forces in operation throughout the year:

1. **The Sunday Morning Chapel Services** are held in Agricultural Hall auditorium and are addressed by prominent clergymen of all denominations who accept special invitations to come to the College for this purpose. These services are well attended. Usually the hall is filled to its capacity of nearly 900. An attractive feature is the music furnished by a choir of about seventy college students.

2. **The Young Men's and Young Women's Christian Associations.** These two organizations are quartered in Alumni Hall on the campus, where parlors, reading rooms, game rooms, a cafeteria, etc. are provided. The room and employment bureau for men is handled by the Y. M. C. A. The Y. W. C. A. handles the employment bureau for women with the exception of those working for room and board, who are placed by the Dean of Women. It also has the room registry for faculty and other employed women. Both carry on a varied and vigorous religious work, religious meetings, Bible classes in the houses where students room, and other activities tending to build up the moral and spiritual life of students. At times the total number of Bible classes reaches nearly 100. The two Associations are rated as among the leading organizations of their kind in the United States.

3. **College Pastors and Church Work.** Several churches maintain college pastors for work with students as their specific task. These are as follows: Congregational, Episcopal, Methodist, Presbyterian. All Ames pastors and churches maintain special work for students. There are ten denominations represented and students find an unusual opportunity not only for worship but for active participation in Sunday School, Young People's work and other special forms of Christian effort.

Geneva Scholarship

The Faculty Women's Club contributes $50 towards the expenses of a delegate to the Y. W. C. A. Central Student Conference at Lake Geneva. This fund is awarded the third quarter of the Sophomore year by a committee from the club. Scholarship, accomplishment in Y. W. C. A. work, interest in general college activities, and personality are the points considered in making the award.

LIBRARY REGULATIONS

The general library is primarily for free reference use; any student or citizen of the state may use the books in the reading rooms. The privilege of drawing books for use outside the building is accorded to all members of the instruction force, to all registered students, and to other accredited persons. Books in the general library not reserved for classes may be borrowed for home use for two weeks and may be renewed for two weeks more if not specially restricted or called for. All books are subject to recall any time when needed for college work.

General reference books, all general periodicals and certain other groups of books are to be consulted in the reading rooms only.

Books from the stacks which are not returned on time are subject to a fine of 5c a day after notice has been sent that the book is due. Books from the Reserve shelves are subject to a fine of 50c for each hour kept overtime.

Books recalled for college work must be returned at once upon receipt of the notice. All books lost or damaged must be paid for.

Hours for Opening. The general library is open week days during the general sessions of the college from 7:50 a. m. to 9:30 p. m. and on Sundays from 2 p. m. to 5 p. m. During the Summer Session the library is open from 8 a. m. to 6 p. m., and 7 to 9 p. m., but is not open on Sundays. During the summer vacation the library is open from 9-12 a. m. and from 1-4 p. m.

Permits may be given to members of the faculty for use at other times. The library is regularly closed on New Year's, Independence, Thanksgiving, and Christmas days. The hours of opening of the department libraries differ somewhat from those given above.

REPORT OF CASES TREATED IN HOSPITAL CLINIC
DIVISION OF VETERINARY MEDICINE
IOWA STATE COLLEGE

From January 1, 1921 to December 31, 1921

	Horses & Mules	Cattle	Swine	Dogs	Cats	Sheep	Goats	Fowls	Total
Abscess	7	1	7	1				1	17
Amputation—Tail	2			11					13
Anaesthesia—Local	58	8	2	2			1		71
General	22	4	78	68	3	1			176
Ascariasis			1		2	1			4
Azoturia	2								2
Arthritis Suppurative	1								1
Black Leg		1							1
Bronchitis	1								1
Canker of Sole	1								1
Castration	11	23	70	4	3				111
Caesarean Section		1	13	3		1			18
Caponize								1	1
Cryptorchid	2		4			1			7
Cerebral Hemorrhage				1					1
Cholera—Fowl								6	6
Catarrh Respiratory Tract								1	1
Contusion	19	2	1	3					25
Chondritis	2								2
Claws—long					1				1
Contraction, Superficial Digital Flexor	1								1
Cystitis	1								1
Dehorning		1							1
Digestive Disturbance	6	2	3	7	2				20
Diphtheria—Avian								5	5
Distemper	2			27					29
Dystokia	1	1	13	3		1			19
Ear—Trim				9					9
Otitis Media			1	2					3
Otitis Externa					1				1
Contraction	1								1
Eye—Keratitis	3								3
Periodic Ophthalmia	11								11
Conjunctivitis	6	1		3					10
Entropion	1								1
Hypopion	2								2
Enucleation	1	1							2
Eczema	1		2	5				1	9

	Horses & Mules	Cattle	Swine	Dogs	Cats	Sheep	Goats	Fowls	Total
Enteritis	1		5		2				8
Empyema, sinus—frontal		1							1
Gutteral Pouch	1								1
Fracture Facial	1								1
Phalanx—second	1								1
Tibia		1		3					4
Femur				2					2
Sacrum	1								1
Fistula—Withers	39	1							40
Sternal	1								1
Teat		1							1
Croup	1								1
Mandible	1								1
Feet, Long	1	1							2
Gonitis	3								3
Glanders Test	47								47
Hernia Inguinal			38						38
Umbilical		1	19						20
Ventral	1		3						4
Hematoma	3	2	1	1	1				8
Health Certificate	1		3						4
Hemorrhagic Septicemia									
Autopsy		3	1			4			8
Vaccination		65	1			232			298
Heat Stroke	1								1
Hog Cholera—Autopsy			32						32
Vaccination			108						108
Influenza	1								1
Johne's Disease		1							1
Joint Ill	2								2
Laryngitis	3			2					5
Lameness—unclassified	2								2
Laminitis	1								1
Laryngeal Hemiplegia	5								5
Lice	1								1
Mange	1			2					3
Metritis		8	1						9
Navicular Disease	4								4
Oophorectomy	1	1		59	2				63
Orchitis			1						1
Pododermatitis	6								6
Posthitis	7								7
Pervious Urachus	6								6
Pneumonia		1	25						26
Poll Evil	1								1
Prolapse Rectum			2			1			3
Uterus						1			1

	Horses & Mules	Cattle	Swine	Dogs	Cats	Sheep	Goats	Fowls	Total
Poisoning					1			2	3
Quarter Crack	2								2
Rabies				1					1
Rupture Peroneus Tertius	1								1
Rachitis			1	1					2
Ringbone	5								5
Ring Worm		10							10
Rumenotomy		1							1
Rhinitis				1					1
Rheumatism			1						1
Scaly Leg								1	1
Seborrhea	2								2
Scirrhous Cord			37						37
Soundness Examination	28								28
Sclerostomiasis	5								5
Scratches	1								1
Septicemia	1	1	1			1			4
Shoulder Tumor	9								9
Sterility	2	11	2			1	2 rabbits		18
Spavin	6								6
Seroma	6								6
Stringhalt	1								1
Sweeney	5								5
Tetanus						1			1
Tendinitis	3								3
Tongue, Split		1							1
Tuberculin Test		46	14			1	1	37	99
Ties		4							4
Teeth—Enamel Points	67								67
Long Teeth	13		7						20
Alveolar Periostitis	10			1					11
Dental Caries	2			1					3
Fracture Mandible	4								4
Decayed	2								2
Split	4								4
Shear Mouth	3								3
Wave Mouth	3								3
Irregular	1								1
Supernumerary	4								4
Tumor—									
Actinomycoma		5	4	1					10
Osteoma	1								1
Melanoma	1								1
Fibroma—Teat		1							1
Fibroma	3								3
Sarco-fibroma	3								3
Fibro-sarcoma	3								3
Sarcoma—Spindle Cell	2								2
Fibro-adeno-carcinoma	1								1

	Horses & Mules	Cattle	Swine	Dogs	Cats	Sheep	Goats	Fowls	Total
Carcinoma		2							2
Papilloma		1							1
Keloid	1								1
Thrush	8								8
Urethral Diverticulum							1		1
Wounds	41		3	8	3				55
Grand Total	564	216	505	232	21	247	3	55	1845
							2 rabbits		
No. Anaesthesia	80	12	80	70	3	1	1		247

Grand Total of Cases 1845
Total No. of Anaesthesia 247

Total No. of Animals 1598

Summary of Examinations made by Department of Pathology Division of Veterinary Medicine

Iowa State College

From January 1, 1921 to January 1, 1922

A. Autopsies
- Horses 10
- Cattle 11
- Sheep 27
- Swine 115
- Dogs 6
- Cats 4
- Goats 2
- Poultry 33
- Rabbits 0

Total Autopsies 208

B. Histopathologic
- Number of animals 257
- Number of tissues 337

C. Bacteriologic 56

D. Parasitologic 37

E. Meat Inspections
- Cattle 21
- Sheep 43
- Swine 112

Total inspections 176

Note:—The above autopsies include clinic cases brought in for autopsy; also animals that die or are destroyed.

Meat inspections are made on all carcasses prepared in the Animal Husbandry Farm Meat Laboratory Courses.

REPORT OF CASES VISITED BY AMBULATORY CLINIC
DIVISION OF VETERINARY MEDICINE
IOWA STATE COLLEGE

From January 1, 1921 to December 31, 1921

Return calls are not enumerated

	Horses & Mules	Cattle	Sheep	Swine	Fowls	Dogs
A. INFECTIOUS DISEASES						
Strangles	16					
Distemper						3
Navel Ill	9	1				
Hog Cholera and Vaccination				8474		
Hemorrhagic Septicemia		1	5			
Blackleg and Vacc.		5				
Malignant Edema	1					
Infectious Keratitis			6			
Infectious Enteritis				365		
Actinomycosis		1				
White Scours		2				
Roup					400	
Chicken Cholera					150	
Tetanus	1					
Tuberculosis		3				
B. DISEASES OF RESPIRATORY ORGANS						
Pneumonia	1			1		
Bronchitis	1					
Broncho-Pneumonia				1934		
C. DISEASES OF DIGESTIVE SYSTEM						
Ascariasis				1419		
Acute Indigestion	18	14				
Chronic Indigestion	1					
Impaction	10					
Intestinal Twist	1					
Oesophageal Choke		1				
Traumatic Indigestion		1				
Sclerostomiasis	6					
Gastric Tympany	5					
Intestinal Tympany	29					
Atony Rumen		2				
Impaction Rumen		6				
Hemorrhagic Gastritis						1
Gastro-enteritis		32				

	Horses & Mules	Cattle	Sheep	Swine	Fowls	Dogs
D. DISEASES OF NERVOUS SYSTEM						
Lumbar Paralysis			1	2		
Supra-Scapular Paralysis	1					
Heat Stroke	9					
Parturient Paresis		6				
E. DISEASES OF CIRCULATORY SYSTEM						
Septicemia		1				
F. DISEASES OF EYE						
Conjunctivitis						2
Periodic Ophthalmia	4					
Contusion of Eye	2					
G. MISCELLANEOUS						
Azoturia	5					
Parturient Laminitis	2					
Mallein Test	11					
Examination for Soundness	2					
Tuberculin Test		145				
Peritonitis	2			1		
Parotitis		1				
Eczema	2					
Catarrhal Fever		1				
Polyarthritis	1					
Scirrhous Cord				6		
Urticaria		1				
H. GENITO-URINARY TRACT						
Prolapse of Vagina		1				
Dystokia	1	9		7		
Cesarean Section				4		
Retained Placenta	3	33				
Metritis		4				
Catarrhal Metritis		77				
Cervicitis		26				
Examination Sterility		51				
Pervious Urachus	5					
Mastitis, Purulent		1				
Mastitis, Catarrhal		9				
Atresia, Teat		5				
Castration	11	12	15	53		
Lacerated Teat		5				

	Horses & Mules	Cattle	Sheep	Swine	Fowls	Dogs
I. SURGICAL DISEASES						
1. Head						
Dehorning		4				
Enamel Points	20					
Pharyngeal Abscess	3	1				
2. Neck						
Tracheotomy	1					
3. Withers						
Fistula	5					
4. Abdomen						
Prolapse Rectum				1		
Rumenotomy		2				
Ventral Hernia				4		
Dock Tail	1					
5. Fore Limb						
Abscess, shoulder	2					
Tumor	2					
Seroma, shoulder	3					
Suppurative Pododermatitis	7					
Pododermatitis	1					
Nail Puncture	5					
Wire Cuts	16	4				
Quarter Crack	3					
Laminitis	6	1				
Open Joint	2					
Contracted Tendons	1					
Fracture 2nd Phalanx	1					
6. Hind Limb						
Wire Cuts	5					
Infected Tendon Sheaths	2					
Gonitis	1					
Abscess, hock	1					
7. Post Mortem						
Intestinal Twist	1					
Hog Cholera				60		
Black Leg		2				
Pneumonia		2				
Tuberculosis			3			

	Horses & Mules	Cattle	Sheep	Swine	Fowls	Dogs
Roup					2	
Peritonitis	2			1		
Totals	252	475	30	12332	552	6

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